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UMBRELLA DEVICE

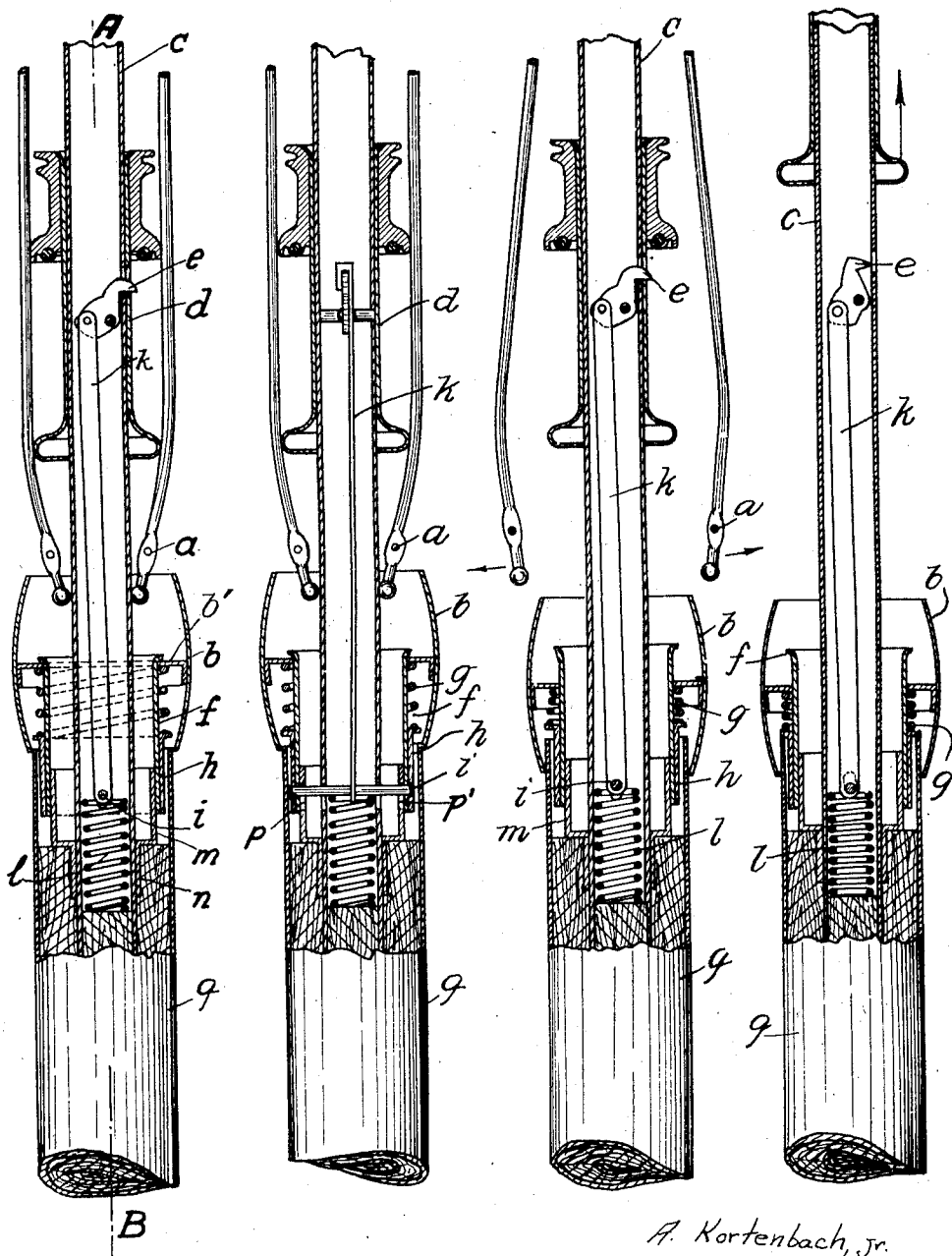
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Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.



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UMBRELLA DEVICE

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In the known automatically opening umbrellas the releasing of the ends of the umbrella ribs and of the umbrella slide is effected by a simple hand operation, for instance by pressing a button or withdrawing the ferrule that retains the ends of the umbrella ribs in such a manner that the ends of the umbrella ribs are released and immediately thereupon the umbrella may open. This arrangement has the disadvantage that the umbrella may open owing to carelessness or inadvertence or that such a spring pressure or pull has to be exerted that the release of the device for holding the umbrella in the closed position is possible only by using a certain amount of power.

Moreover the mounting of the umbrella cover causes difficulties since this is possible only when the umbrella is in a middle position between its normal open and closed position, that is to say when the umbrella is in such a position that the ends of the umbrella ribs are released by the retaining ferrule but the umbrella is not completely open.

According to the present invention an automatically opening umbrella is provided in which the intermediate position above referred to can be obtained as desired, the arrangement being such that when the ferrule of the umbrella is withdrawn, first of all only the ends of the umbrella ribs are released. This first part of the opening operation can be separated from the second part of the opening operation—that is to say the complete opening of the umbrella by the release of the umbrella slide—, any desired interval of time being left between the two parts of the opening operation. However the arrangement is such that the two parts of the opening operation can follow immediately one after the other by the retaining ferrule of the umbrella ribs being withdrawn to a greater extent.

In order to prevent the complete opening of the umbrella owing to carelessness or inadvertence, the release of the umbrella slide is effected after a greater resistance is overcome than the resistance that has been required for releasing the ends of the umbrella ribs.

The invention is illustrated by way of example in the accompanying drawings in which—

Figure 1 is a longitudinal section showing the retaining ferrule in its closed position,

Figure 2 is a section along the line A—B of Fig. 1,

Figure 3 is a sectional elevation similar to that shown in Figure 1 the retaining ferrule being however half opened, whilst

Figure 4 is a further sectional elevation showing the retaining ferrule in its complete open position.

The ends *a* of the umbrella ribs of an automatically opening umbrella are kept next to the umbrella stick *c* by means of the ferrule *b*, the umbrella slide *d* being in that case locked by the catch *e*. The ferrule *b* is provided in its interior and approximately in the middle with a ring *b'*, which is used for guiding a sleeve *f* which is bent over at the end near the said ring so as to form a flange and which is surrounded by a helical spring *g*. The one end of the latter spring abuts against the ring *b'* whilst its other end abuts against a sleeve *h* which is placed on the sleeve *f*. The two sleeves are connected together by means of a bolt or pin *i* which traverses the said sleeves and is riveted thereto. A connecting link *k* is secured at one end to the said pin whilst the catch *e* above referred to is pivotally secured to its other end. The pin *i* rests against a helical spring *l* which is arranged within the umbrella stick *c* and said pin is guided in slots *p*, *p'* formed in a third sleeve *m*, *n* having portions of different diameters and being arranged in the handle *q* of the umbrella. As the second spring is mounted in the interior of the umbrella stick it is possible to provide the device on handles of any kind.

When the ferrule *b* is withdrawn against the action of the spring *g* the ends *a* of the umbrella ribs are freed from the ferrule. If the ferrule is now released, the umbrella is in a half opened position in which position the cover of the umbrella can easily be mounted. The complete opening of the umbrella is effected only by the ferrule being withdrawn to such an extent that the bolt or pin *i* compresses the spring *l* until the catch *e* becomes disengaged from the umbrella slide *d*.

What I claim is:—

1. Device for releasably holding an umbrella closed, including a movable ferrule for retaining the ends of the ribs, a slide mounted on an umbrella stick, a catch capable of engaging with and becoming disengaged from said slide, a sleeve relatively to which the ferrule can be displaced, another sleeve surrounding said sleeve and having an abutment, a spring capable of being compressed against the said abutment when the ferrule is withdrawn to a predetermined extent to release the ends of the umbrella ribs and a second spring, said stick having a handle within which said second spring is located, a transverse pin connected to said sleeves and pressing on top of the second spring and a link secured to the transverse pin and pivotally connected to the catch whereby when the ferrule is further withdrawn the second spring is compressed by the transverse pin until the catch is released from the slide as and for the purpose set forth.

2. A device for releasably holding an umbrella closed including a movable ferrule for retaining the ends of the umbrella ribs, a slide mounted on an umbrella stick, a catch capable of engaging with and becoming disengaged from said slide, a spring capable of being compressed when the ferrule is withdrawn to a predetermined extent to release the ends of the ribs, a second spring capable of being compressed under the action of the first spring when the ferrule is further withdrawn, and a link actuated by said ferrule against the action of said second spring to release the catch from the slide.

In testimony whereof I have signed my name to this specification.

AUGUST KORTENBACH, JR.