

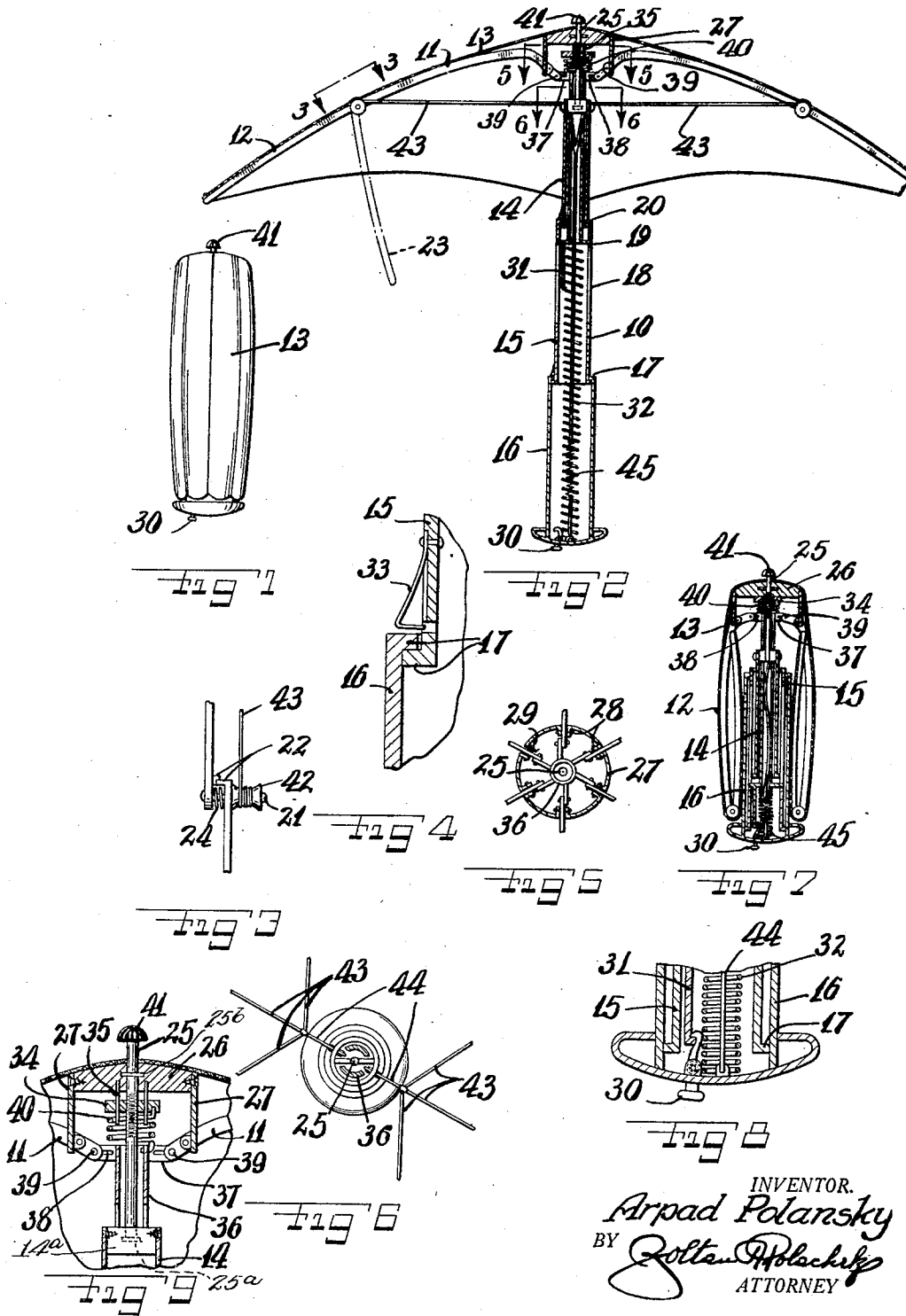
March 17, 1931.

A. POLANSKY

1,797,019

COLLAPSIBLE UMBRELLA

Filed Nov. 27, 1929



UNITED STATES PATENT OFFICE

ARPAD POLANSKY, OF NEW YORK, N. Y.

COLLAPSIBLE UMBRELLA

Application filed November 27, 1929. Serial No. 410,188.

This invention relates to new and useful improvements in umbrellas and has more particular reference to a novel collapsible umbrella.

5 The invention has for an object the provision of a device of the class mentioned which is of simple durable construction, dependable in use and efficient in action, and which can be manufactured and sold at a reasonable cost.

10 The invention proposes a collapsible handle, collapsible ribs mounted on the top thereof and consisting of inner and outer rib sections, covering material attached on said ribs, means for holding the handle collapsed,

15 means for holding the handle extended, means for holding the inner rib sections collapsed or extended, and means for holding the outer rib sections collapsed or extended.

20 For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:—

30 Fig. 1 is a side elevational view of the umbrella in fully collapsed condition.

Fig. 2 is a vertical sectional view of the umbrella in fully extended condition.

35 Fig. 3 is a fragmentary view of one of the ribs, per se seen as though looking in the direction of the line 3—3 of Fig. 2.

Fig. 4 is an enlarged fragmentary detailed view of a portion of Fig. 2.

40 Fig. 5 is a horizontal fragmentary sectional view taken on the line 5—5 of Fig. 2.

Fig. 6 is a horizontal fragmentary sectional view taken on the line 6—6 of Fig. 2.

Fig. 7 is a vertical sectional view of Fig. 1.

Fig. 8 is a fragmentary enlarged detailed view of a portion of Fig. 7.

45 Fig. 9 is an enlarged fragmentary view of the upper portion of my umbrella, as shown in Fig. 2.

50 The collapsible umbrella consists of a collapsible handle 10, collapsible ribs mounted on the top of the handle 10 and consisting of

inner and outer rib sections 11 and 12 respectively, covering material 13 attached on said ribs, means for holding the handle collapsed, means for holding the handle extended, means for holding the inner rib sections collapsed or extended, and means for holding the outer rib sections collapsed or extended.

The said collapsible handle 10 consists of several tubular telescopic handle sections. Three such sections have been shown and may be referred to as small diameter top handle section 14, intermediate diameter handle section 15 and large diameter bottom handle section 16. Flanges 17 are arranged on the intermediate and bottom handle sections 15 and 16 and coact with each other to limit the extended position of these parts. Slots 18 are formed in the intermediate handle section 15 and receive pegs 19 projecting from the top handle section 14 for limiting relative movements of these parts. In addition, flanges 20 are arranged upon the top and intermediate handle sections and coact with each other for limiting the extended position of these parts.

75 The inner and outer rib sections 11 and 12 of each of the ribs are pivotally connected together by rivet pintles 21. Lugs 22 project from the rib sections and are engageable with each other for limiting the pivoting of the rib sections into aligned position or into a position in which the inner rib section is horizontal and the outer rib section may assume downward vertical positions. Dot and dash lines 23 in Fig. 2 indicate the vertical position of the outer rib section while the full lines indicate the aligned positions. A coaxial spring 24 is arranged upon the rivet pintle 21 and acts between the inner and outer rib sections for normally urging the outer rib section into the vertical when the inner rib section is in the horizontal.

85 The said mounting of the collapsible ribs upon the handle consists of a vertical rod 25 rotatively mounted on the top handle section 14 and rotatively engaging a disc 26 for holding the disc at a fixed distance from the top handle section 14. The handle section 14 has a top plug 14^a and a flange 25^a on the bottom of the rod 25 rotatively engaging in the plug

14^a for nonslidably and rotatively connecting these parts. A flange 25^b on the rod 25 rotatively engages in the disc 26 for nonslidably and rotatively connecting these parts. A collar 27 projects from the disc 26 and is provided with lugs 28 engaged by pintle pins 29 pivotally supporting the inner rib sections. The pivotal supporting is near the inner end of the inner rib section as may be seen from an inspection of Fig. 2.

The said covering material 13 is of conventional construction, that is, it may be of cloth and is attached upon the ribs. The means for holding the handle in collapsed condition consists of a latch 30 mounted upon the bottom handle section 16 and engageable with a hook 31 on the top handle section 14 so as to hold the sections of the handle together.

The means for holding the handle in extended condition consists of an expansion spring 32 within the handle and acting between the top and bottom handle sections so as to normally urge these sections apart. This spring is so designed that it does not extend the handle into its fully extended position. Preferably the amount of extension should be about eighty per cent. The means for holding the handle in fully extended position is concluded with spring catches 33 mounted upon the intermediate and top handle sections and engageable against the top edges of the bottom and intermediate handle sections respectively. After the spring 32 has extended the handle approximately eighty per cent, the sections must be manually pulled apart for accomplishing the full extension.

The means for holding the inner rib sections collapsed or extended consists of a member 34 slidably connected with the disc 26, as for example by pegs 35 projecting from the disc 26 and engaging thru apertures formed in the member 34. This member 34 is threadedly engaged upon the vertical rod 25. A free collar 36 is slidably mounted upon the rod 25 and is provided with lugs 37 formed with elongated slots 38 accommodating pintle pins 39 engaging thru the inner ends of the inner rib sections 11.

A spring 40 is connected between the member 34 and the collar 36. In the lowered position of the collar as illustrated in Fig. 1, the spring 40 acts as an expansion spring so as to normally urge the collar downwards and thus pivot the inner rib sections into extended positions. The vertical rod 25 is formed with a head portion 41 which may be manually rotated so that the member 34 is raised. In the raised position, the spring 40 acts as a tension spring and draws the collar 36 upwards so as to correspondingly pivot the inner rib sections into the collapsed condition.

The means for holding the outer rib sections in collapsed or extended positions con-

sists of a drum 42 attached upon each of the outer rib sections and coaxially on the rivet pintle 21. Cords 43 are wound upon these drums and connect with main cords 44 extended thru the hollow collapsible handle 10 and attached on their inner ends upon the bottom handle section 16. A spring 45 is interposed between the ends of the cords 44.

The operation of the umbrella may be easily traced by first assuming the collapsed position shown in Fig. 1. For extending the umbrella, it is merely necessary to manually disengage the latch 30 so as to release the hook 31. Thereupon spring 32 urges the handle 10 into eighty per cent of its extended position. In this condition the outer rib sections 12 may assume the vertical position indicated by the dot and dash lines 23. This is accomplished by proper rotation of the rod 25 for lowering the member 34 so that the spring 40 urges the collar 36 downwards. Next the handle may be fully extended manually and the position is maintained by the catches 33 assuming their operative positions. Upon complete extension of the handle 10, the cords 43 and 44 are drawn upon under the resilient action of the spring 45 so as to move the outer rib sections into their extended positions.

While I have shown and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:—

1. In a collapsible umbrella, a handle, a top disc above the top of said handle, a rod rotatively and nonslidably mounted on said handle and rotatively and nonslidably mounted through said disc, a head formed on the extended end of said rod, a collar fixed on said disc, rib sections pivotally mounted on the collar and having their inner ends extended towards said rod, a free collar on the rod and pivotally connected with the inner ends of said ribs, a member threadedly engaged on said rod, means for slidably supporting said member and restraining rotations, and a spring acting between said member and said free collar so that in one position of the member the spring is under compression to extend the rib sections and in another position of said member obtained by rotation of said rod said spring is under tension to fold said rib sections.

2. In a collapsible umbrella, a handle, a top, disc above the top of said handle, a rod rotatively and non-slidably mounted on said handle and rotatively and non-slidably mounted through said disc, a head formed on the extended end of said rod, a collar fixed on

said disc, rib sections pivotally mounted on the collar and having their inner ends extended towards said rod, a free collar on the rod and pivotally connected with the inner ends of
5 of said ribs, a member threadedly engaged on said rod, means for slidably supporting said member and restraining rotations, and a spring acting between said member and said free collar so that in one position of the member the spring is under compression to extend
10 the rib sections and in another position of said member obtained by rotation of said rod said spring is under tension to fold said rib sections, said means for slidably but non-
15 rotatively supporting said member comprises a plurality of pins projecting from said disc and engaging through apertures in said member.

In testimony whereof I have affixed my
20 signature.

ARPAD POLANSKY.

25

30

35

40

45

50

55

60

65