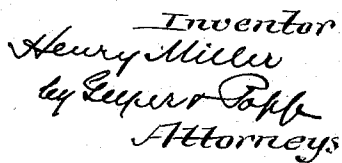


UMBRELLA,

995,168.

Patented June 13, 1911.



UNITED STATES PATENT OFFICE.

HENRY MILLER, OF BUFFALO, NEW YORK.

UMBRELLA.

Specification of Letters Patent. Patented June 13, 1911.

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To all whom it may concern:

Be it known that I, HENRY MILLER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Umbrellas, of which the following is a specification.

This invention relates to an umbrella which can be opened and closed like those now in general use but which can also be collapsed or knocked down into a smaller compass than that which it occupies in its ordinary folded condition, so as to render the same more compact and permit of stowing the same in a smaller space for transportation and other purposes.

It is the object of this invention to provide an umbrella of this character having improved means for detachably connecting the covering to the frame.

In the accompanying drawings: Figure 1 is a sectional elevation of my improved umbrella showing the same unfolded for use. Fig. 2 is a bottom plan view of the cap for holding the gromet of the cover in place. Fig. 3 is a bottom plan view of the shield for preventing undue wear on the cover adjacent to its gromet. Fig. 4 is a top plan view of the elastic support for the gromet and adjacent parts of the cover and also protecting the cover from being cut by the head. Fig. 5 is a bottom plan view of the head to which the inner ends of the ribs are pivoted. Fig. 6 is a top plan view of the runner.

Similar letters of reference indicate corresponding parts throughout the several views.

The stick, staff or rod of the umbrella is preferably constructed of two metal tubular sections A, A¹ detachably connected by a screw threaded stem *b* on the upper end of the lower section and engaging with a screw threaded socket B in the lower end of the upper section. When the umbrella is to be shortened for storage or transportation, the sections of the stick are disconnected and placed side by side.

C represents the head of the umbrella, D, D¹ the ribs pivoted on the head, E the braces or stretchers pivotally connected at their outer ends with the ribs, and F the tubular runner which slides lengthwise on the stick and to which the inner ends of the braces or stretchers are pivoted. The head is constructed of sheet metal of circular form and secured to the stick by a rivet or other-

wise and is provided in its underside with a recess or pocket *c* which is adapted to receive the runner when the latter is in its highest position for collapsing the umbrella. Each of the ribs comprises inner and outer sections D, D¹, the inner section being pivoted on the periphery of the head and the opposing ends of the sections being pivotally connected by a transverse pin or rivet *h*, as shown in Fig. 1. The sections of each rib are yieldingly held in a straightened position in line with each other by means of a spiral spring I.

When opening and closing the umbrella in the ordinary use of the same the runner is moved downwardly to the central part of the lower section of the stick for folding the umbrella, or upwardly to the central part of the upper stick section for unfolding the umbrella, as shown in Fig. 1. When, however, the umbrella is to be collapsed and shortened the runner is moved upwardly to the upper part of the upper stick section and into the recess of the head, thereby causing the inner sections of the ribs to be closed around the stick and the braces. Preparatory to thus shifting the braces in this upper folded position the outer sections of the ribs are turned upwardly against the resilience of their springs I, and after the ribs and braces have been folded into this position the lower section of the stick is removed and placed alongside of the upper parts of the umbrella so as to render the whole more compact.

Q represents the cover of the umbrella which may be constructed of any suitable flexible material and which is detachably secured to the ribs and the stick so that it may be conveniently renewed when worn out or removed for cleaning, repairing or storing. For this purpose the cover is provided at its center with a non-elastic ring or gromet *q*, at equidistant points on its outer edge with an annular row of rings or loops *q*¹ and equidistant on its underside between its center and edge with an annular row of clasps R.

S represents a conical crown of rubber or similar elastic material which has a cylindrical upper part or collar *s* fitting tightly around the stick above the head C so as to form a water tight joint with the stick, and a bell-shaped or conical lower part or flange *s*¹ which projects laterally and downwardly from the lower end of the collar *s* and be-

yond the head C and pivotal connections between the latter and the ribs so as to protect the adjacent part of the cover which rests upon the flange s^1 from the wear of the head and rib pivots. On its upper side the flange s^1 is provided with a lower annular groove t and an upper annular groove t^1 . The lower groove t receives the gromet at the center of the cover. The gromet is non-elastic but is capable of being sprung into and out of the groove t owing to the elastic character of the crown.

U represents a conical non-elastic cap, preferably of sheet metal, having an upper cylindrical collar u which fits tightly around the collar of the crown and a conical flange u^1 projecting laterally and downwardly from the lower edge of the collar u so as to overhang the gromet of the cover. On its underside the flange of the cap is provided with an annular integral bent bead or projection u^2 which is adapted to engage with the upper groove of the crown by springing or deflecting part of the crown adjacent to the upper edge of the upper groove and thereby hold the cap against displacement on the crown.

For the purpose of preventing the cap from wearing the cover adjacent to the gromet, a conical washer or guard u^3 of leather or other soft material is interposed between the flange of the cap and the central part of the cover, as shown in Fig. 1. This means of mounting the center of the

cover on the stick produces not only a water tight joint between these parts at this place but also permits of readily detaching and assembling the parts for renewing, cleaning, repairing or storing the cover. The outer sections of the ribs are provided with notches or recesses v which are adapted to receive the outer rings q^1 of the cover.

I claim as my invention:

A folding umbrella comprising a stick, ribs pivotally connected with the stick, an elastic crown having a cylindrical upper part which fits around the upper part of the stick and a lower downwardly inclined conical part which is provided on its upper convex side with upper and lower annular grooves, a cover arranged on the ribs and provided with a non-elastic gromet which is sprung into the lower groove of the crown, and a non-elastic cap mounted on said crown and having a cylindrical upper part which surrounds the cylindrical upper part of said crown, a lower conical part which overhangs said gromet and is provided on its underside with an annular bead which is sprung into the upper groove of the crown.

Witness my hand this 27th day of December, 1909.

HENRY MILLER.

Witnesses:

THEO. L. POPP,
ANNA HEIGIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."