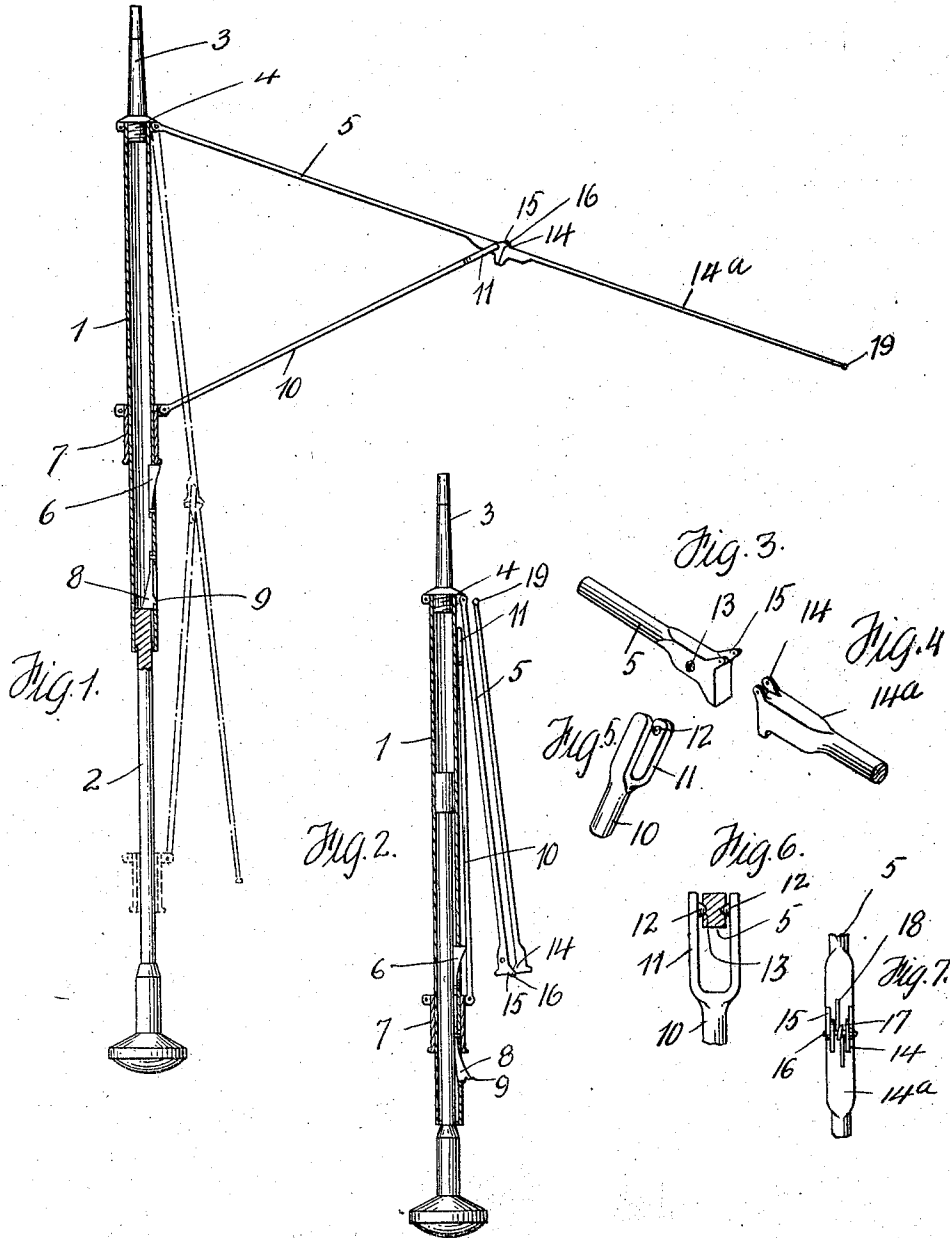


W. L. MILLS & F. F. GERHARD.
FOLDING UMBRELLA.
APPLICATION FILED OCT. 20, 1909.

956,396.

Patented Apr. 26, 1910.



Witnesses:
Samuel Payne.
R. H. Butler

Inventors.
W. L. Mills.
F. F. Gerhard.
by *A. C. [Signature]* Co.
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIS L. MILLS AND FRANK F. GERHARD, OF KINGWOOD, PENNSYLVANIA.

FOLDING UMBRELLA.

956,396.

Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed October 20, 1909. Serial No. 523,632.

To all whom it may concern:

Be it known that we, WILLIS L. MILLS and FRANK F. GERHARD, citizens of the United States of America, residing at Kingwood, in the county of Somerset and State of Pennsylvania, have invented certain new and useful Improvements in Folding Umbrellas, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to umbrellas and aims to provide an umbrella in a manner as hereinafter set forth with a telescopic handle and further with means whereby the stretchers are detachably connected to the inner ribs to enable a close folding of the umbrella when occasion so requires.

Further objects of the invention are to provide an umbrella which shall be simple in its construction, strong, durable, efficient in its use, provided with means for maintaining the outer rib in an extended position with respect to the inner rib when the umbrella is opened, inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views: Figure 1 is a sectional elevation showing in full lines the umbrella extended and in broken lines the position of a stretcher and rib prior to the extending of the rib. Fig. 2 is a sectional elevation of the umbrella when closed. Fig. 3 is a perspective view of the outer end of the inner rib section. Fig. 4 is a perspective view of the inner end of the outer rib section. Fig. 5 is a perspective view of the outer end of a stretcher. Fig. 6 is a sectional detail illustrating the outer end of the stretcher connected to the inner rib section, and Fig. 7 is a detail in plan illustrating the spring for maintaining the outer rib section projected with respect to the inner rib section.

Referring to the drawings in detail:—The

stick comprises an upper section 1 and a lower section 2, the latter being adapted to telescope within the upper section 1. To the upper section 1 is secured the ferrule 3 and the notched collar 4. The inner rib sections 5 are attached to the notched collar in a known manner.

The upper section 1 of the stick is provided with a spring latch 6 for maintaining the runner 7 in an elevated position and the said upper section 1 is also provided with an inwardly extending spring latch 8 which engages the upper end of the lower section 2 of the stick to maintain the said section 2 in an extended position with respect to the stick section 1. The latch 8 is provided with a finger piece 9 so that it can be withdrawn to allow of the stick section 2 telescoping in the section 1 when closing the umbrella. The finger piece 9 is such as to allow the runner 7 to force the latch 8 inwardly when the runner 7 is moved off the upper section 1 and to the lower section 2 as indicated in dotted lines in Fig. 1. When the lower section 2 is moved to a telescopic position within the section 1 when the umbrella is closed the friction exerted by the latch 8 against the section 2 maintains it in position.

Pivotaly connected in a known manner to the runner 7 are the stretchers which are indicated by the reference character 10 and each of the stretchers 10 has its outer end bifurcated, as at 11, and with the arms formed by the bifurcation resilient and provided with inwardly extending lugs 12. The bifurcated end 11 of the stretcher 10 is adapted to straddle the outer end of the inner rib section 5 and when in such position the lugs 12 detachably engage in the recesses 13 formed at the outer end of the inner rib section 5 and is clearly shown in Fig. 6.

The outer rib section is indicated by the reference character 14 and has its inner end provided with a pair of rearwardly extending apertured lugs 14 which are adapted to be positioned when the umbrella is opened and the rib sections extended between the forwardly projecting apertured lugs 15 formed at the outer end of the inner rib sections 5 and as clearly shown in Fig. 7. The apertured lugs 14 and 15 are pivotaly connected together by a pin 16 which carries a coiled spring 17 having one of its ends engaging the outer end of the inner rib section 5, as at 18, and the other of its ends engag-

ing the inner end of the outer rib section 14^a. The function of the spring 17 is to maintain the opposed ends of the rib sections in abutting engagement when the rib sections are extended through the medium of shifting the stretchers 10 to the positions shown in full lines in Fig. 1. The outer rib sections 14^a are adapted to fold back upon the inner rib sections 5 when the umbrella is closed as indicated in Fig. 2. The outer rib sections 14^a are provided with eyes 19 for connecting the umbrella cover (not shown) thereto.

It will be assumed that the umbrella is in a position as shown in full lines in Fig. 1, the runner 7 is lowered whereby the stretchers and rib sections will assume the position shown in dotted lines in Fig. 1, the stretchers are then detached from the inner rib sections 5 and the runner 7 and handle 2 shifted to the position shown in Fig. 2, the outer rib sections are then folded back upon the inner rib sections 5 to the position shown in Fig. 2 and the umbrella is then folded.

What we claim is:—

1. An umbrella comprising stretchers having bifurcated outer ends provided with inwardly-extending lugs, inner and outer rib sections pivotally-connected together, each of said inner rib sections having its sides at the outer ends thereof flattened and provided with recesses for the reception of the lugs of the stretcher whereby the inner rib section is detachably-connected to the stretcher.

2. An umbrella comprising stretchers having bifurcated outer ends provided with inwardly-extending lugs, inner and outer rib sections pivotally-connected together, each of said inner rib sections having its sides at the outer ends thereof flattened and provided with recesses for the reception of the lugs of the stretcher whereby the inner rib section is detachably-connected to the stretcher, and a spring surrounding the pivot of the rib sections and having the inner end engage the inner rib section and its outer end engage the outer rib section for maintaining the opposing ends of the rib sections in abutting engagement when the rib sections are supported by the stretcher.

3. An umbrella comprising stretchers having bifurcated outer ends provided with inwardly-extending lugs, inner and outer rib sections pivotally-connected together, each of said inner rib sections having its sides at its outer ends flattened and provided with recesses for the reception of the lugs of the stretcher whereby the inner rib section is detachably connected to the stretcher, a stick, means for connecting the inner rib section to the stick, and a runner mounted on the stick and connected to the stretcher.

4. An umbrella comprising stretchers having bifurcated outer ends provided with inwardly-extending lugs, inner and outer

rib sections pivotally-connected together, each of said inner rib sections having its sides at its outer ends flattened and provided with recesses for the reception of the lugs of a stretcher whereby the inner rib section is detachably-connected to the stretcher, a spring surrounding the pivot of the rib section and having the inner end engage the inner rib section and its outer end engage the outer rib section for maintaining the opposing ends of the rib sections in abutting engagement when the rib sections are supported by the stretcher, a stick, means for connecting the inner rib section to the stick, and a runner mounted on the stick and connected to the stretcher.

5. An umbrella comprising stretchers having bifurcated outer ends provided with inwardly-extending lugs, inner and outer rib sections pivotally-connected together, each of said inner rib sections having its outer end provided with recesses for the reception of the lugs of a stretcher whereby the inner rib section is detachably-connected to the stretcher, a stick section formed of an upper and a lower section, the former adapted to extend in the latter, means for connecting the inner rib section to the upper stick section, means carried by the upper stick section for maintaining the lower rib section extended, and a runner mounted upon the stick and connected to the stretcher.

6. An umbrella comprising stretchers having bifurcated outer ends provided with inwardly-extending lugs, inner and outer rib sections pivotally-connected together, each of said inner rib sections having its outer end provided with recesses for the reception of the lugs of a stretcher whereby the inner rib section is detachably-connected to the stretcher, a stick section formed of an upper and a lower section, the former adapted to extend in the latter, means for connecting the inner rib section to the upper stick section, means carried by the upper stick section for maintaining the lower rib section extended, a runner mounted upon the stick and connected to the stretcher, and means carried by the upper stick section for maintaining the stretchers extended.

7. An umbrella comprising stretchers each having a bifurcated outer end and with each arm formed by the bifurcation provided on its face at a point removed from its outer terminus with an inwardly-extending lug, an inner and an outer rib section, the inner terminus of the outer rib section being flat and the outer terminus of the inner rib section being flat, said flattened inner terminus of the inner rib section having the upper corner thereof provided with oppositely-projecting inclined lugs, said flattened inner terminus of the outer rib section being provided with inwardly-extending inclined apertured lugs, means extend-

ing through said lugs for pivotally-connect-
ing the rib sections together, said flattened
outer terminus of the inner rib section hav-
ing each side thereof provided with a recess
5 for the reception of the lugs of said arm
whereby the inner rib is detachably con-
nected to the stretcher.

In testimony whereof we affix our signa-
tures in the presence of two witnesses.

WILLIS L. MILLS.
FRANK F. GERHARD.

Witnesses:

E. B. LEER,
H. M. HOSTETLER.