

No. 620,815.

Patented Mar. 7, 1899.

J. C. WARREN.  
UMBRELLA.

(Application filed Feb. 10, 1898.)

(No Model.)

Fig. 1.

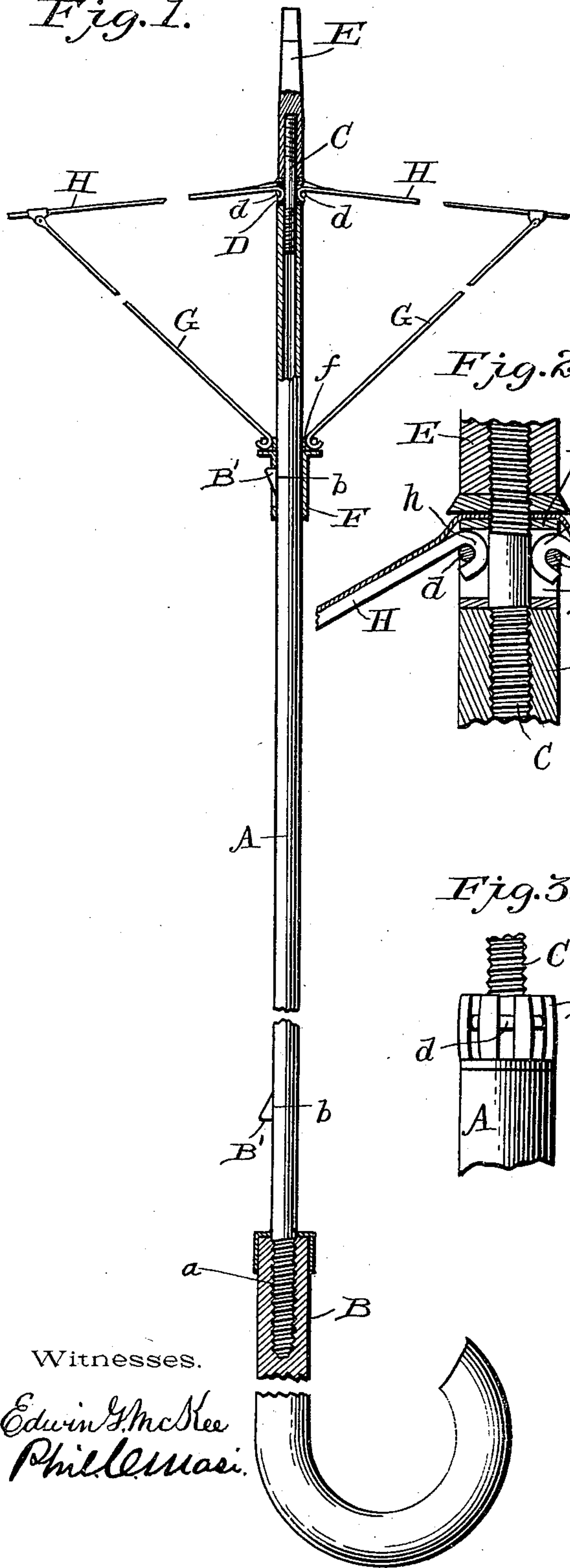


Fig. 2.

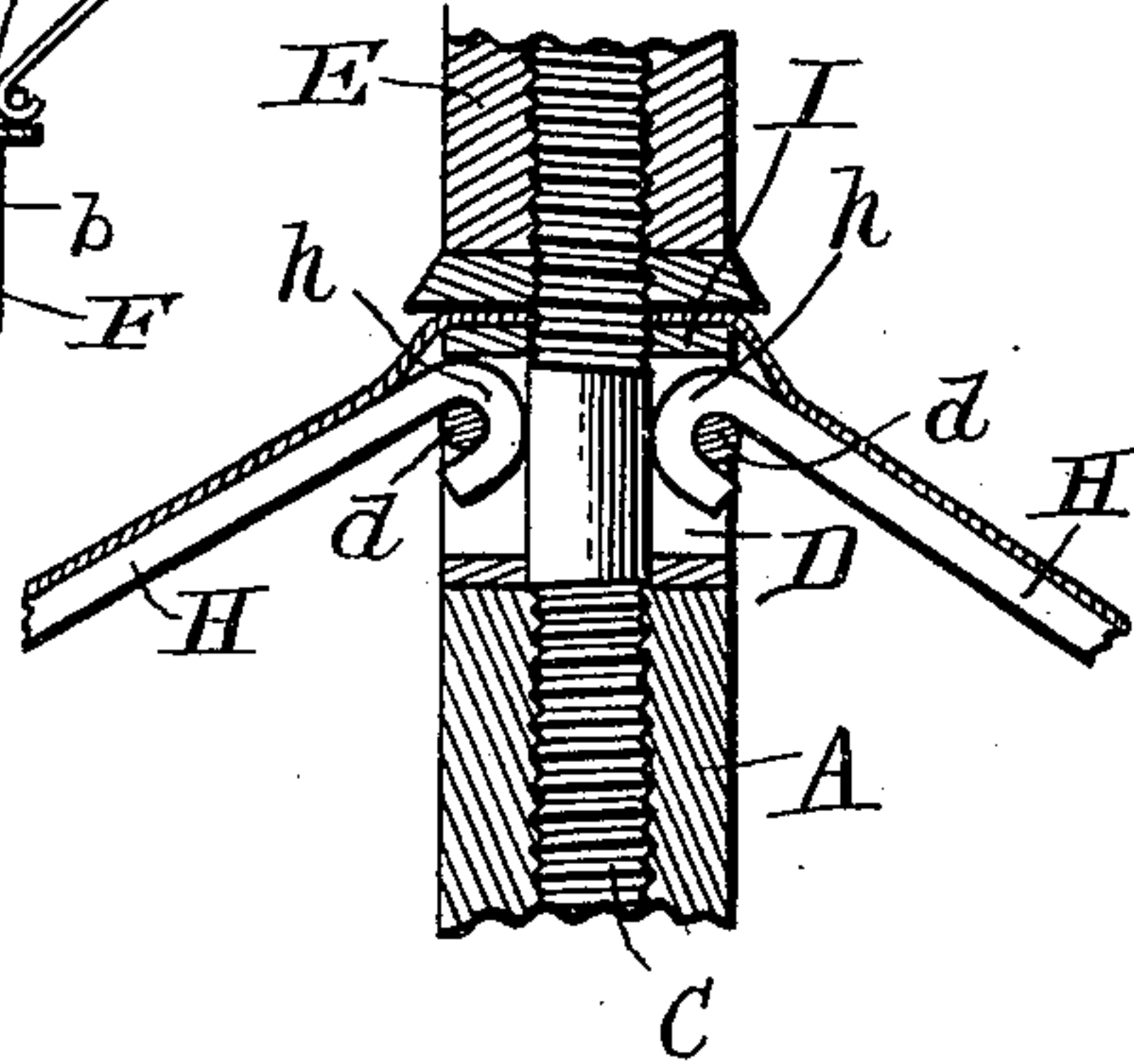


Fig. 4.

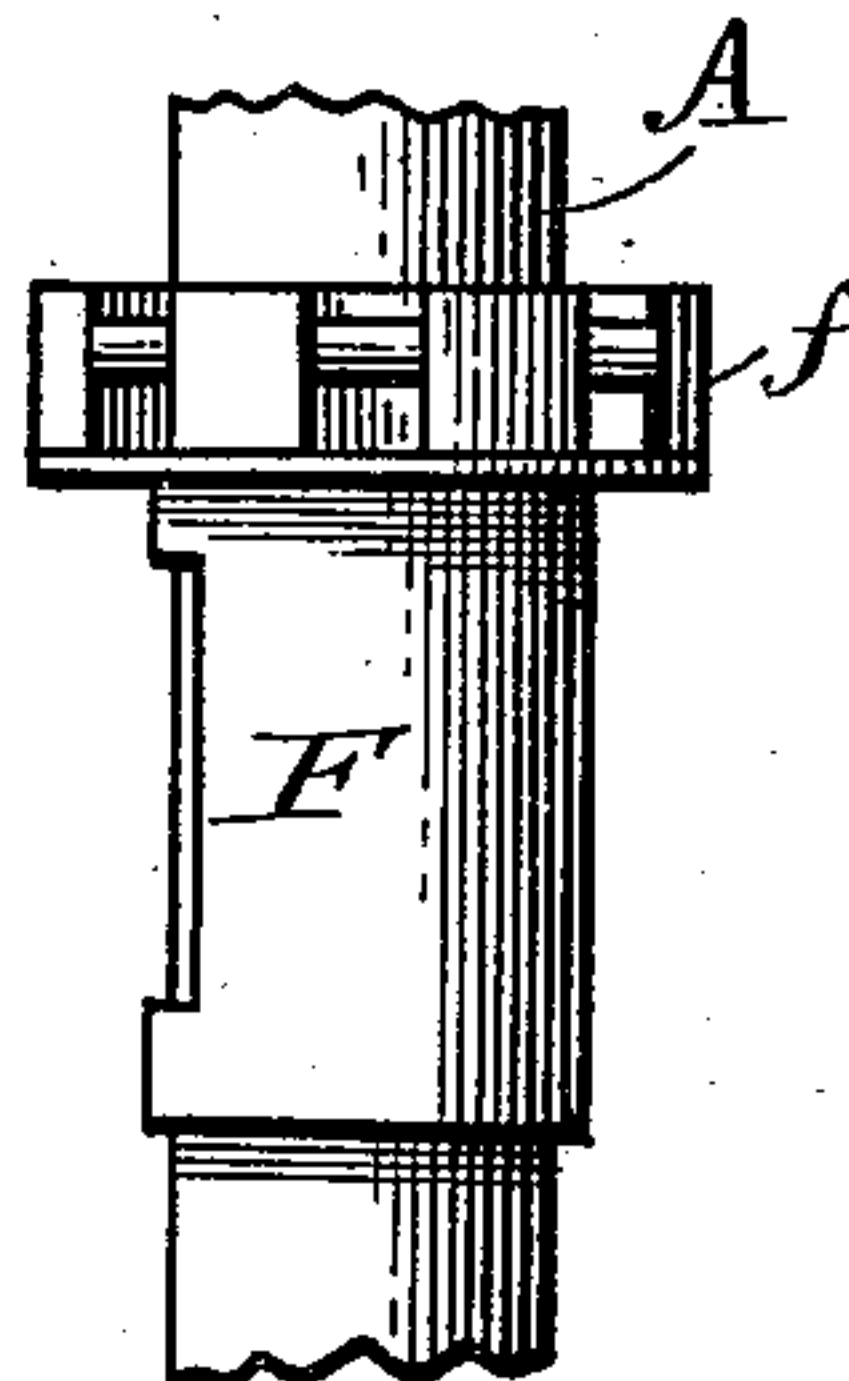


Fig. 5.

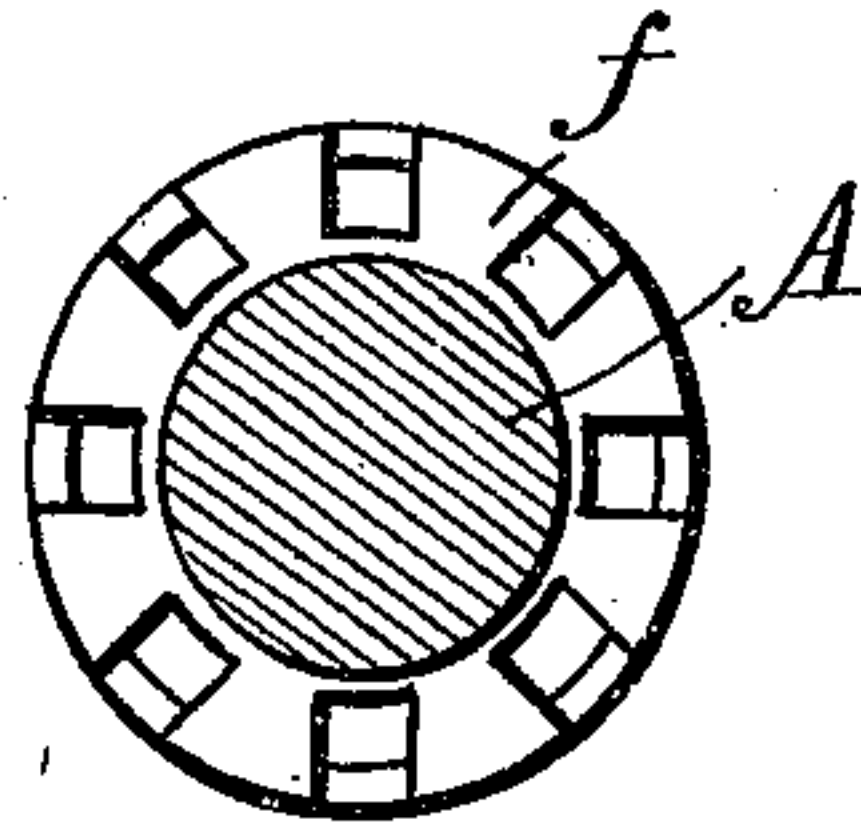


Fig. 3.

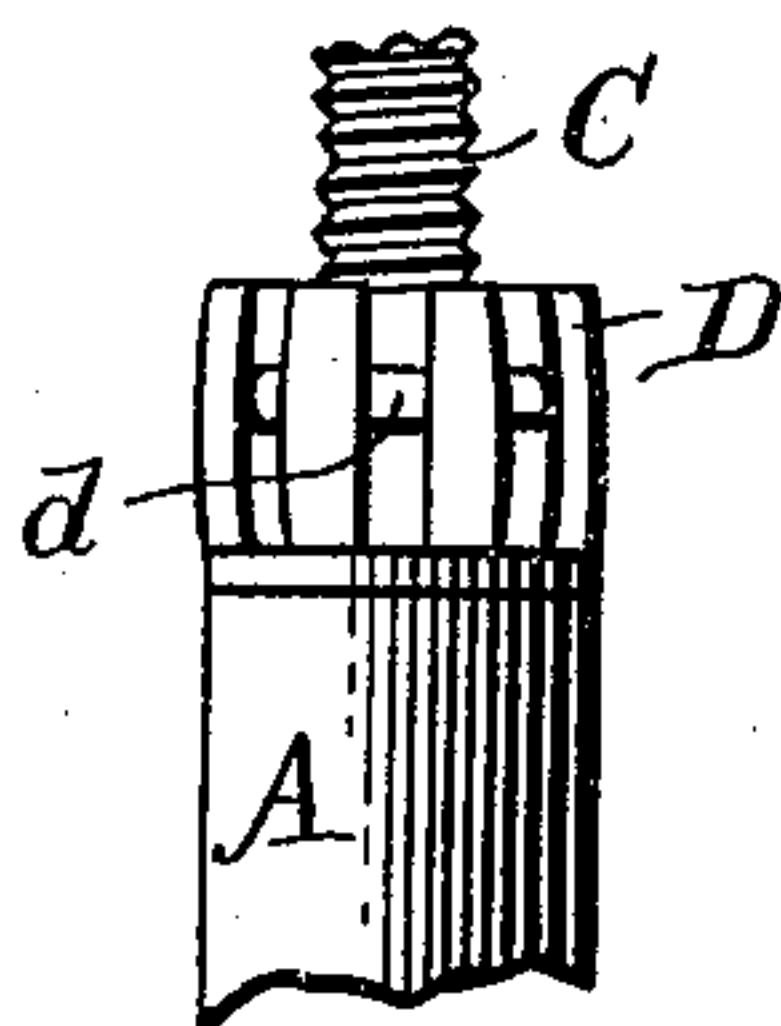
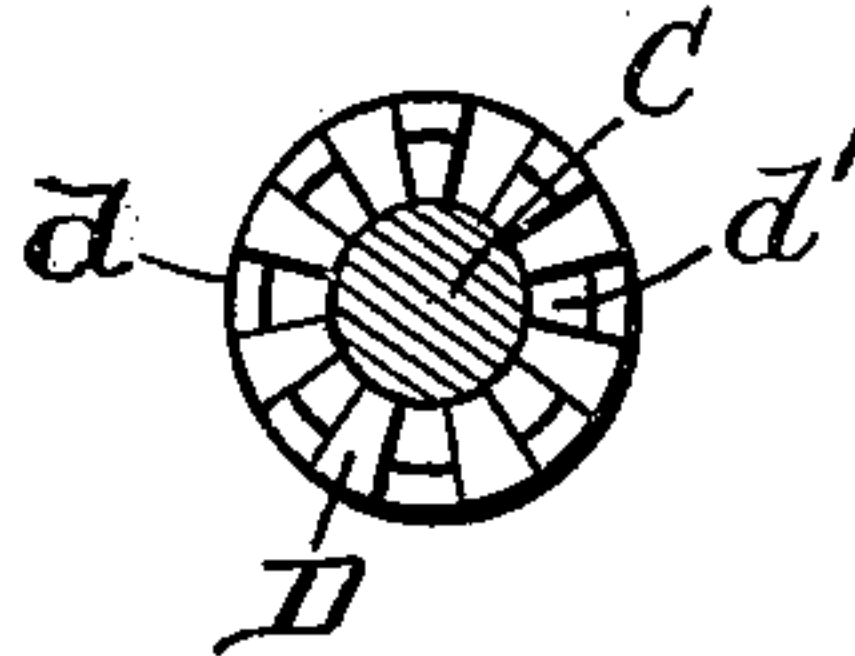


Fig. 6.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 620,815, dated March 7, 1899.

Application filed February 10, 1898. Serial No. 669,834. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN CALVIN WARREN, a citizen of the United States, and a resident of Menallen, in the county of Adams and State of Pennsylvania, have invented certain new and useful Improvements in Umbrellas; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a sectional view in elevation of an umbrella embodying my invention. Fig. 2 is an enlarged sectional detail view of the upper notch-ring. Fig. 3 is an enlarged detail view of the same. Fig. 4 is a detail view of the runner-sleeve. Fig. 5 is a top plan view of the same, and Fig. 6 is a top plan view of the upper notch-ring.

This invention has relation to certain new and useful improvements in umbrellas; and it is designed to provide an umbrella which is light, strong, and durable, which can be readily repaired without removing the cover, which will present a neat appearance and can be folded and rolled to a diameter but little greater than that of the stick, and which can be put into such shape as to be readily packed and carried in a trunk.

With these objects in view the invention consists in the novel construction and combination of parts, as hereinafter described, and pointed out in the claims.

Referring to the accompanying drawings, the letter A indicates an umbrella-stick which I prefer shall consist of a hollow rod of steel, brass, or other suitable metal and which is of small diameter. At its lower end this stick is formed with a screw-thread  $\alpha$  to enable it to receive a handle B, which may be of wood, bone, or of any material suitable or commonly employed for this purpose. The stick is slotted at  $b$  to receive the spring-catch B'. Screwed into the opposite end of the stick is a pin or stud C, which forms a seat for the top notch-ring D and which is also threaded to receive a removable tip E.

F designates the runner-sleeve, G the braces, and H the ribs.

The notch-ring D is of the same diameter as the adjacent portion of the stick and is formed with reduced bearings  $d$  for the hooked ends of the ribs, the ring being notched above and below each of said bearings and also cut away behind it, as indicated at  $d'$ , whereby the hooks  $h$  of the ribs have free play on said bearings and are permitted to fold closely down upon and around the stick, the ring forming no obstruction to hold them away. The hooks  $h$  at the inner end of each rib are open and can be readily engaged with said ring without removing the latter from the stick, being held in engagement by a washer I, down upon which and the covering the tip E is screwed.

The lower end of each brace G is formed with a similar open hook, and the runner-sleeve F has at its upper end a notch-ring  $f$ , which is of similar character and construction to the top notch-ring.

To repair without removing the covering, the screw-tip E is removed and the umbrella is raised or opened, which causes the ribs to disengage themselves from the top notch-ring and fall apart. Any rib and its brace may then be readily removed and repaired or replaced. In case it is desired to remove only one or a few of the ribs the tip is unscrewed a short distance only. The ribs are then disengaged from the top notch-ring by partially opening the umbrella.

The only opening necessary in the cover is one sufficiently large for the screw pin or stud C to pass through, which makes a much neater appearance and finish when the tip is screwed down than is possible with the ordinary stick and covering.

It will also be seen that the umbrella as thus constructed can be folded and rolled much more closely and compactly than is possible with those umbrellas wherein the diameter of the top notch-ring is greater than that of the stick, thereby holding the ribs away from the stick. In the present construction the ribs fold closely against the stick, and the diameter of the umbrella when folded is but little greater than that of the stick.



By unscrewing and removing the handle and tip the umbrella can be packed and carried in an ordinary trunk.

5 The two notch-rings are preferably made of white metal, aluminium, or some other metal or alloy which will not rust.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

10 1. In an umbrella, the combination with the stick, and a removable screw-tip or ferrule, of a top notch-ring, having a series of bearings for the ribs with open notches above and below said bearings, and also cut away be-  
15 hind the bearings, and the ribs having open hooks which detachably engage the said bearings and are held in such engagement by the screw-tip or ferrule, substantially as specified.

20 2. In an umbrella, the combination with the stick, and a removable screw-tip or ferrule, of a top notch-ring having a series of bearings for the ribs with open notches above and below said bearings, and also cut away be-  
25 hind the bearings, the ribs having the open hooks which detachably engage the said bearings from the upper side, and a washer bearing against the said hooks and held in con-

tact therewith by said screw-tip or ferrule, substantially as specified. 30

3. In an umbrella, the combination with the stick having the removable tip and the pin or stud which secures said tip, of the top notch-ring seated on said pin or stud, and of the same diameter as the stick, said ring hav-  
35 ing a series of bearings for the ribs, with open notches above and below said bearings and cut away behind the same, substantially as specified.

4. In an umbrella, the combination with 40 the stick, and a removable screw-tip or ferrule, of a top notch-ring having a series of bearings for the ribs with open notches above and below said bearings, and also cut away be-  
45 hind the same, the ribs having open hooks which detachably engage the said bearings and means for holding the ribs in such engagement, a runner, and braces detachably connected to said runner, substantially as specified. 50

In testimony whereof I affix my signature in presence of two witnesses.

JOHN CALVIN WARREN.

Witnesses:

GEO. F. YOUNG,

CHAS. W. HOLZWORTH.