

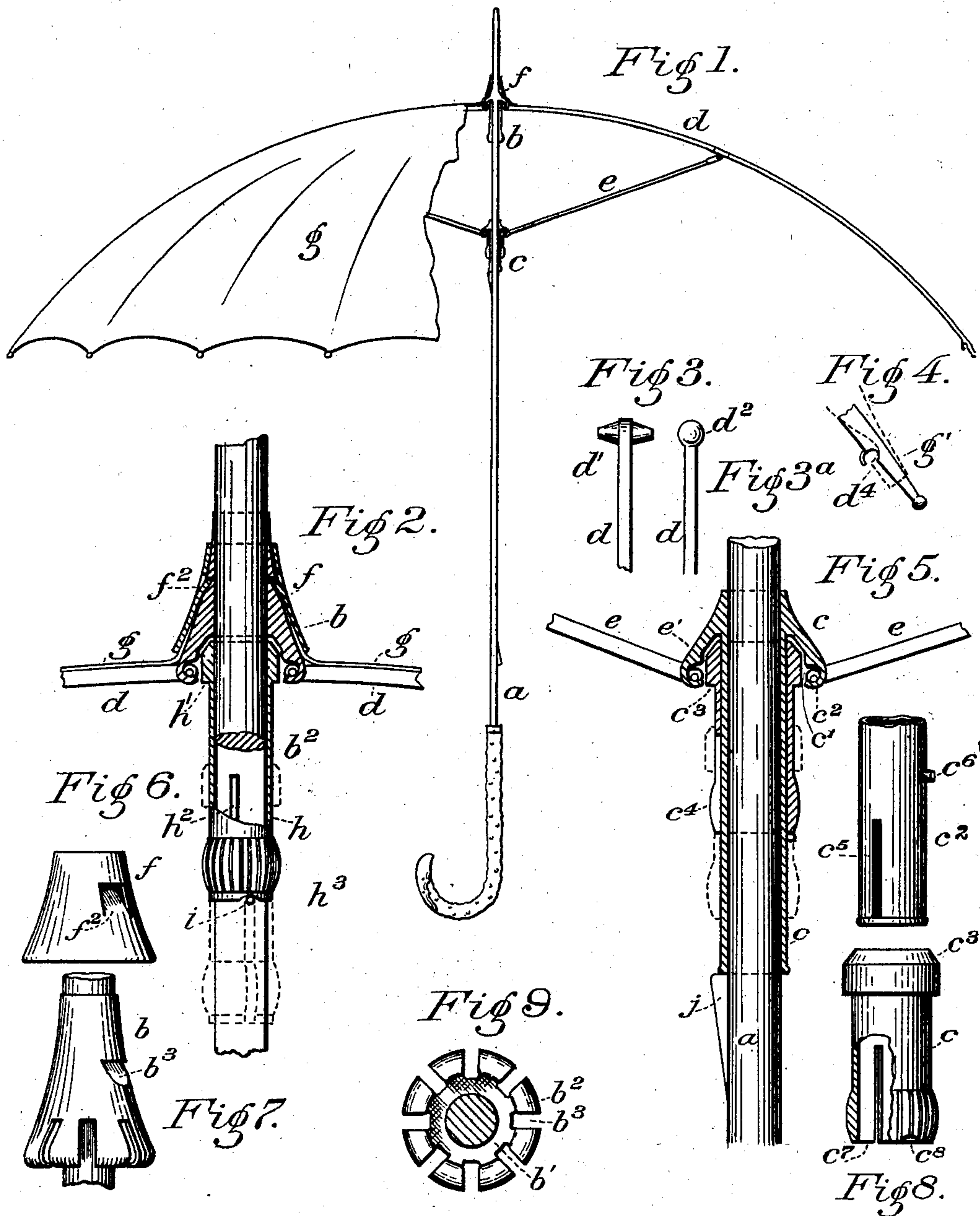
No. 720,537.

PATENTED FEB. 10, 1903.

A. S. VENEN.  
UMBRELLA RIB AND STRETCHER JOINT.

APPLICATION FILED APR. 10, 1901.

NO MODEL.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## UMBRELLA RIB AND STRETCHER-JOINT.

SPECIFICATION forming part of Letters Patent No. 720,537, dated February 10, 1903.

Application filed April 10, 1901. Serial No. 55,226. (No model.)

*To all whom it may concern:*

Be it known that I, ALMON S. VENEN, a citizen of the United States, and a resident of Forestgrove, in the county of Washington and State of Oregon, have invented a new and useful Improvement in Umbrella and Parasol Frames, of which the following is a specification, reference being had to the accompanying drawings as constituting a part thereof.

My invention relates to the construction of the frames of umbrellas and parasols and the attachment of the cover thereto; and my invention has for its object to make the jointed connections of the ribs and braces with the stationary upper ferrule and the lower sliding ferrule or runner such that each rib and brace may be separately inserted, removed, and reinserted or replaced by another for the purpose of repair or otherwise and also to make the attachment of the cover such as to enable the same to be readily removed and replaced. The advantages of this arrangement applied to either umbrellas or parasols are obvious. In the common form of umbrella-frame the work of removing and replacing a single rib is a very unhandy job, particularly so as the removing of a single rib requires the detachment of all the rest. Therefore to repair an umbrella-frame of such construction requires both skill and experience, and such a person may perhaps not be found in small remote places. Furthermore, the advanced skill in manufacturing umbrellas has made it possible to sell the same at very moderate prices, while, on the other hand, the repair of a single broken rib or brace will cost not less than one-fourth of the price of a cheap umbrella. Now in my invention the undesirable conditions are overcome. As my improved frame is constructed one or all of the ribs may be removed and replaced in a few minutes. Indeed as a convenience of shipping the sticks or rods, frame parts, and coverings may be separately packed in a knocked-down condition and can be readily put together again by the storekeeper while the customer is waiting. Each store could keep a supply of extra ribs, and such extra part being of trifling cost and the labor involved in inserting the same not worth while considering the storekeeper could un-

dertake to keep an umbrella purchased at his store in repair for a certain length of time without charge. Extra ribs for frames of standard sizes could also be carried in stock and sold as a staple article even by the smallest country stores, and any person having been once shown how my improved frame is put together can keep his own umbrella in repair without the slightest difficulty. In fact, if he so desires he can put an entirely new frame on an old stick or rod which he may have and wishes to keep, and he can recover his umbrella with the same readiness.

The construction and operation of my improved frame are as illustrated in the accompanying drawings.

In such drawings, Figure 1 represents a partial elevation of an umbrella, part of the cover and of the frame being removed to facilitate inspection. Fig. 2 is a detail in vertical section, with parts in elevation, of the upper fixed ferrule to which the inner ends of the ribs are jointedly and detachably connected. This figure also shows the means for securing the center of the cover. Figs. 3 and 3<sup>a</sup> are details of section of the hinge-heads  $d'$   $d^2$  of the inner ends of the ribs and the braces enabling their removable attachment to the fixed ferrule, as well as to the sliding ferrule or runner. Fig. 4 is a detail showing a tip of one of the ribs so constructed as to enable the ready attachment of the outer edge of the cover, the same being adapted to such attachment. Fig. 5 is a vertical section of the sliding ferrule or runner used by me for jointedly and detachably connecting the inner ends of the braces. Fig. 6 is an elevation showing the removable cap  $f$ , the function of which is to secure the center of the cover in place. Fig. 7 shows the fixed ferrule  $b$  constructed to jointedly and removably hold the inner ends of the ribs and also to have said cap  $f$  secured over it after the cover has been put in place. Fig. 8 shows the two parts of the sliding ferrule  $c$  separated, so as to more clearly show their construction, and Fig. 9 is a bottom view of the fixed ferrule  $b$ . The base of the sliding ferrule  $c$  is of the same construction. The letters designate the parts referred to.

The stick or rod  $a$  is of the usual construc-



tion. The braces *e* are also attached to the ribs *d* in the usual manner. The inner ends of the ribs instead of being perforated to receive the usual wire are provided with hinge-heads *d'*, as illustrated in Figs. 3 and 3<sup>a</sup>, the former representing such hinge-heads as having projecting trunnion-like portions *d'* and the latter representing such hinge-heads as of globular form. It may be observed here that in the usual form of construction the rib-joints are the weakest part of the frame, considering their wear, while in my construction these parts are strengthened, and there is neither flattening nor perforation in my form of the rib ends. The upper fixed ferrule *b* is constructed in its lower portion like a socket, having a flaring base, providing knuckle portions *b*<sup>2</sup>, with intermediate recesses *b*<sup>3</sup>, as shown in Fig. 9. The inner ends of the ribs are adapted to freely move up and down between the knuckles *b*<sup>2</sup>, while the enlarged heads of the ribs are seated and held in such knuckle portions. When putting the frame together, the heads at the inner ends of the ribs are inserted in the knuckles *b*<sup>2</sup>, and then the same are secured against disengagement by means of the wedge *h'*, being an enlargement or head on the sleeve *h*, such wedge being tapered or otherwise suitably formed to facilitate its passing behind the hinge-heads of said rib ends. To operate and secure the sleeve *h*, the stick or rod is provided with a pin *i*, and the sleeve *h* has a slot *h*<sup>2</sup> and a recess *h*<sup>3</sup>, the slot enabling the sleeve to be so turned as to be pulled out of the socket of the ferrule *b* to release one or more of the inner ends of the ribs and the recesses *h*<sup>3</sup> operating to allow the sleeve *h* to be so placed on the pin *i* as to be secured against working around, which might result in an accident by bringing the slot *h*<sup>2</sup> over the pin *i* and allow the wedge *h'* to fall out of its place. The sleeve *h* actually functionates merely as a stem of the wedge, and hence it may also be of other form. The ferrule *b* is provided with two recesses and shoulders *b*<sup>3</sup>, oppositely positioned, as seen in Fig. 2, only one being seen in Fig. 7, and the cap *f* has oppositely-positioned inwardly-inclined tongues *f*<sup>2</sup>, adapted to engage the shoulders of the recesses *b*<sup>3</sup>. These provide the means for detachably securing the center of the cover on the frame. The cap *i* is disengaged again by turning the same to either side. The means for hingedly holding the inner ends of the braces *e* is approximately like those described for hinging the inner ends of the ribs. For such purpose I employ a sliding ferrule or runner *c*, provided with a socket *c'*, having knuckles *c*<sup>2</sup> and intermediate recesses like in the socket of the upper fixed ferrule to receive the hinge-heads *e'* of the free ends of the braces. The hinge-heads of the braces

the ribs, and they are secured in place by the wedge *c*<sup>3</sup>, being an enlargement or head on the sleeve *c*<sup>4</sup> and tapered or otherwise formed to easily pass behind the hinge-heads *e'*. The sliding ferrule or runner *c* has a slot *c*<sup>5</sup> to receive the spring *j* and is also provided with a pin *c*<sup>6</sup>. The sleeve *c*<sup>2</sup> is made to easily slide up and down on the sleeve *c* and has a slot *c*<sup>7</sup> and recess *c*<sup>8</sup>, and the sleeve *c*<sup>4</sup> is released and secured by the same operation as explained of the sleeve *h*. The fastening ends of the cover are provided with socket-like portions, as shown by *g'* in dotted outline in Fig. 4, adapting such ends to be drawn over the tips of the ribs, such rib-tips inserted therein and the said cover ends secured against pulling up by the hook *d*<sup>4</sup>.

The above description of my invention also makes the operation thereof plain. To remove a rib, it is but necessary to release the rib from the fixed ferrule and the brace from the sliding ferrule, one after the other, by pulling back the wedges *h'* *c*<sup>3</sup>, the umbrella being so held that the hinge-heads of the ribs and braces not to be removed will rest in the sockets of the ferrules. The rib removed can then be readily replaced by another by the same operation, care being taken to lock sleeves *h* *c*<sup>4</sup> against working around, as mentioned. Finally, the edge of the cover which had to be loosened is fastened again to the tip of the inserted rib, and the umbrella is ready for service once more.

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

An umbrella consisting of a stick, ribs, *d*, and braces, *e*, each provided with trunnion-like heads, *d'*, at their hinging extremities, and the means for removably hinging such extremities to the stick, consisting of the ferrules, *b* and *c*, the former of which is fixed and the latter movable, and each of such ferrules comprising a flaring base having an annular cavity and radially-projecting, claw-like knuckles, *b*<sup>2</sup>, with intermediate recesses; a longitudinally-movable sleeve provided with a wedge-head which is inserted in said cavity, and constitutes a closure for the open ends of such knuckles; means for locking such sleeve in place; the cover, *g*, and the cap, *f*, removably affixed on the ferrule, *b*, and securing the center of the cover; said cover having sockets, *g'*, and the extremities of the ribs, *d*, having hooks, *b*<sup>4</sup>, engaging said tips, substantially as described.

In testimony whereof I have hereunto affixed my signature, in the presence of two witnesses, this 22d day of March, 1901.

ALMON S. VENEN.

Witnesses:

T. J. GEISLER,  
F. W. AYERS.

It is hereby certified that in Letters Patent No. 720,537, granted February 10, 1903, upon the application of Almon S. Venen, of Forest Grove, Oregon, for an improvement in "Umbrella Ribs and Stretcher-Joints," it was erroneously stated in the grant and in the heading of the printed specification, that said Venen had assigned "one-half" his interest to A. B. Thomas, whereas it should have been stated that he had assigned "one-third" interest to said A. B. Thomas, said Thomas being the assignee of one-third interest only in said patent, as shown by the record of assignments in this Office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 14th day of July, A. D., 1903.

[SEAL.]

E. B. MOORE,  
*Acting Commissioner of Patents.*