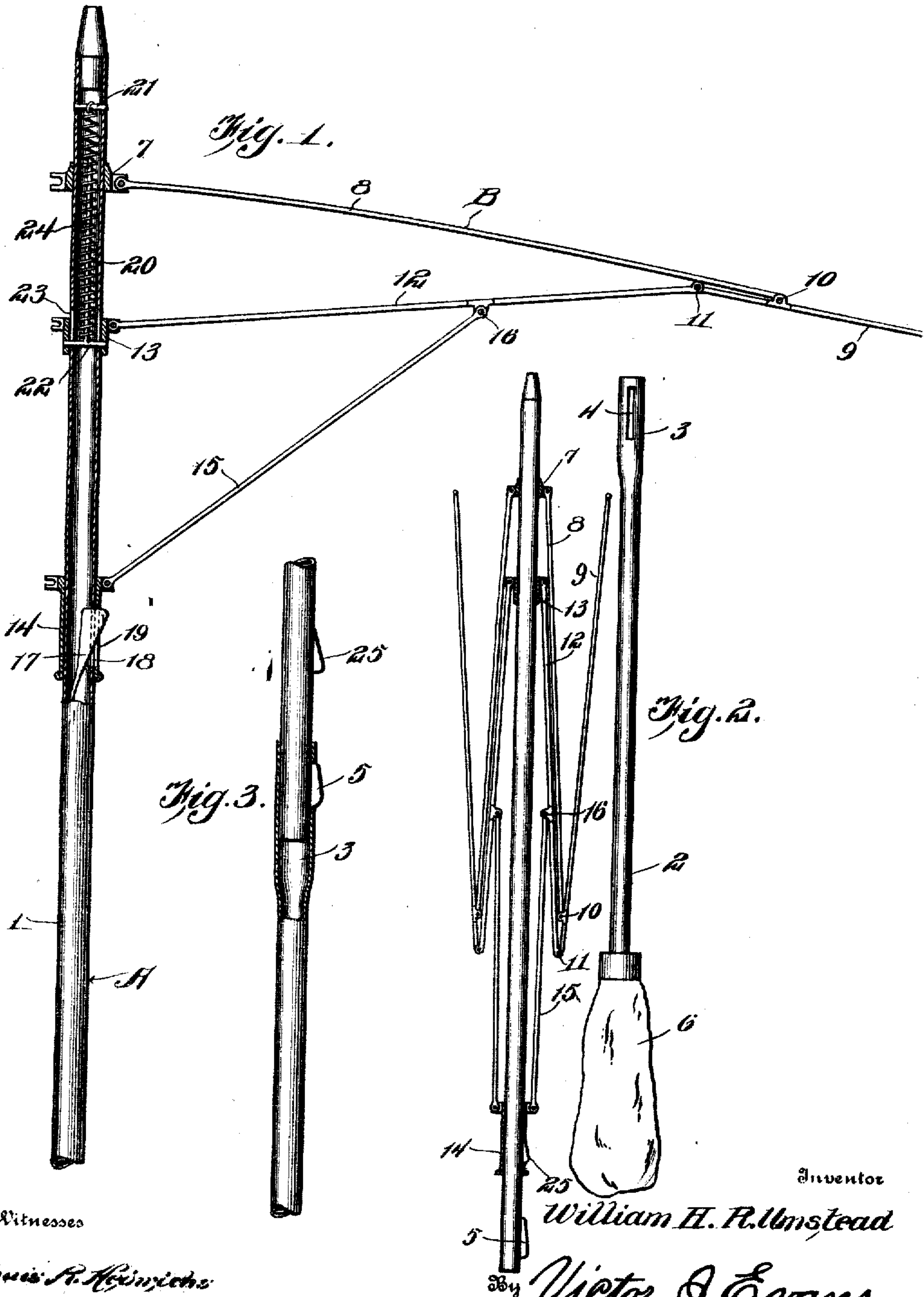


W. H. R. UMSTEAD.
FOLDABLE UMBRELLA.
APPLICATION FILED JUNE 17, 1908.

920,505.

Patented May 4, 1909.



Witnesses

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FOLDABLE UMBRELLA.

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To all whom it may concern:

Be it known that I, WILLIAM H. R. UMSTEAD, a citizen of the United States, residing at Harrison, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Foldable Umbrellas, of which the following is a specification.

This invention relates to a foldable umbrella of that type having ribs composed of inner and outer hingedly-connected sections so arranged that the outer sections fold back over the inner sections when the umbrella is closed so as to take up comparatively little space for permitting the umbrella to be carried in a trunk, suit case or the like, the handle rod being made in detachable sections to permit the size of the umbrella to be reduced.

The invention has for one of its objects to improve and simplify the construction and operation of apparatus of this character so as to be comparatively simple and inexpensive to manufacture, composed of few parts, and readily manipulated.

Another object of the invention is the provision of a foldable umbrella having hingedly-connected rib sections and two sets of brace rods, one set being connected with the inner ends of the outer rib sections and the second set being connected with the first set at points intermediate the ends of the latter and the brace rods being connected with separate runners.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a fragmentary view of the umbrella open, parts being shown in section. Fig. 2 is a side view of the umbrella entirely folded or collapsed. Fig. 3 is a detail view showing the connection between the two parts of the handle rod.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawing, A designates the handle rod composed of two sections 1 and 2, the latter having its inner extremity formed into a socket 3 into which the section 1 fits. The socket 3 has a longitudinal slot 4 for re-

ceiving the spring catch 5 arranged within the upper handle rod section 1 so as to lock the parts together. On the handle rod section 2 is a handle or grip 6 of any suitable character that is securely fixed thereto.

On the section 1 is a fixed ring 7 to which are hingedly connected in the usual manner the ribs B of the umbrella. These ribs are composed of inner sections 8 and outer sections 9 that support the covering (not shown) in the usual manner. The outer ends of the inner rib sections overlap the inner ends of the outer sections and the sections are connected together by hinges 10. Connected with the inner ends of the outer sections 9, at 11, are auxiliary rods 12 that are attached to an auxiliary runner 13 on the handle rod. Also on the handle rod is a main runner 14 which is manipulated for opening and closing the umbrella and attached to this runner are main brace rods 15 that have their outer ends hingedly-connected at 16 with the brace rods 12 almost at a central point. Within the upper section 1 of the handle rod is a spring catch 17 that projects through a slot 18 in the section 1 and engages in a slot 19 in the runner 14 when the umbrella is open. The upper section of the handle rod, which is hollow, contains a helical spring 20 that is arranged to press on the auxiliary runner 13 for the purpose of moving the parts of the umbrella firmly in open or closed position and prevent slack, while at the same time permitting of ample freedom of movement for opening and closing the umbrella. This spring has its upper end attached to a cross pin 21 anchored in the handle rod and its lower end connected with a cross pin 22 that passes through longitudinal slots 23 arranged in the handle rod section 1 at diametrically opposite sides, the ends of the cross pin 22 being anchored in the auxiliary runner 13. This cross pin serves to limit the movement of the runner 13 and the spring 20 normally urges the runner 13 downwardly. Attached to the cross pin 22 is a rod 24 that passes centrally through the spring 20 and serves as a guide therefor.

When the umbrella is open, as shown in Fig. 1, the ribs are rigidly held in extended position by the brace rods 12 and 15. The spring 20 pressing downwardly on the runner 13 throws the inner ends of the rods 12 downwardly so that the outer ends or hinges 11 are urged upwardly, as the hinges 16 serve as fulcrum points. The upward movement

of the outer ends of the rods 12 is limited by the hinges 11 engaging the under sides of the inner sections 8 of the ribs B, and with the parts in this position, the outer sections of the ribs will be substantially in alinement with the inner sections. The ribs 15 are locked in fixed position by the runner 14 engaged by the catch 17 so that the umbrella cannot be blown inside out under the effect of the wind. When it is desired to close the umbrella, the catch 17 is released by pressing inwardly thereon so that the runner 18 can be slipped downwardly on the handle rod so as to swing the brace rods 12 downwardly, with the result that the outer rib sections will be swung upwardly about the pivots 10, while the inner rib sections are drawn downwardly close to the handle rod until the parts assume the position shown in Fig. 2. The spring 20 pressing downwardly on the runner 13 urges the brace rods 12 longitudinally so that the latter will maintain the outer sections 9 of the ribs inwardly close around the stick of the umbrella and the runner 14 is locked in closed position by a catch 25. The section 2 of the handle rod is then detached by releasing the catch 5 and it can be strapped, if desired, to the remaining part of the collapsed umbrella.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what I claim is:—

1. The combination of a handle rod, a ring thereon, main and auxiliary runners on the

rod, ribs connected with the ring and composed of hingedly-connected sections, auxiliary brace rods connected with the inner ends of the outer rib sections and with the auxiliary runner, main brace rods connected with the main runner and with the auxiliary brace rods at points intermediate the ends of the latter, and a resilient device carried by the handle rod and arranged to constantly press on the auxiliary runner.

2. The combination of a handle rod, ribs hingedly-connected therewith and composed of inner and outer sections, the inner sections being hingedly-connected with the outer sections at points intermediate the ends of the latter, and the inner ends of the outer sections being disposed under the inner sections, an auxiliary runner having a limited movement on the handle rod, a spring constantly pressing on the said runner, auxiliary brace rods connected with the runner and with the inner ends of the outer rib sections, a main runner on the handle rod, and main brace rods connected with the main runner and the auxiliary brace rods.

3. The combination of a sectionalized handle rod, ribs connected therewith and composed of foldable sections, an auxiliary runner, a slot and pin device for limiting the movement of the runner on the handle rod, a spring arranged within the handle rod and constantly pressing on the said runner to urge the latter downwardly, brace rods connected with the runner and outer rib sections, a main runner slidably mounted on the handle rod at a point below the auxiliary runner, and main brace rods connected with the main runner and with the first-mentioned brace rods at points intermediate the ends of the latter.

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

WILLIAM H. R. UMSTEAD.

Witnesses:

CHARLES R. COOK,
THOMAS WOOTTON.