No. 829,858. PATENTED AUG. 28, 1906.

C. EATON.

FOLDING UMBRELLA.

APPLICATION FILED JUNE 24, 1904.

Fig. 1.

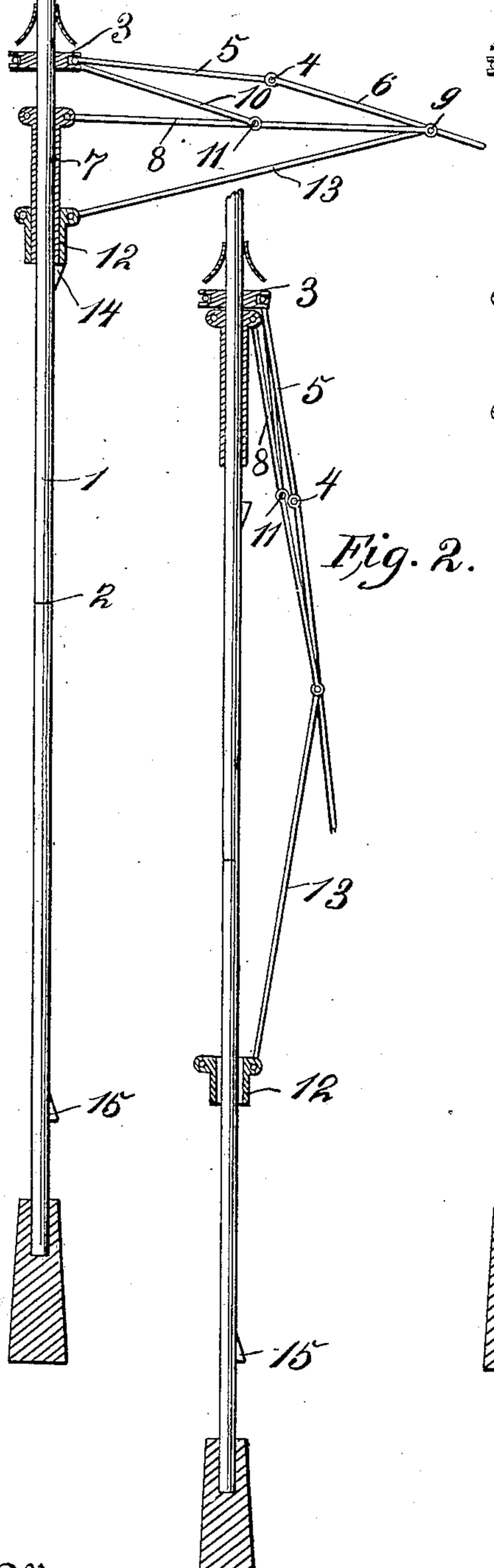


Fig. 2.

Fig. 3.

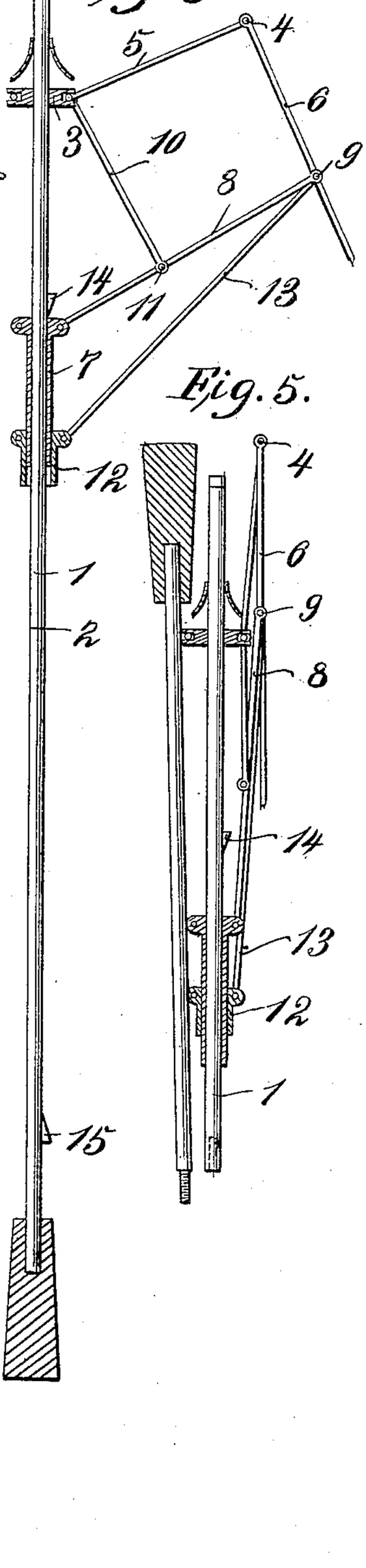
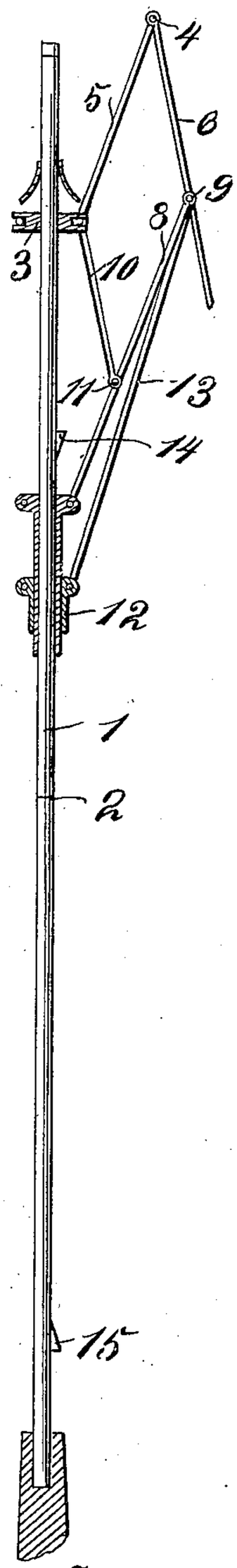


Fig. 5.

Fig. 4.



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FOLDING UMBRELLA.

No. 829,858. Specification of Letters Patent. Patented Aug. 28, 1906.

Application filed June 24, 1904. Serial No. 213,957.

To all whom it may concern:

Be it known that I, CHARLES EATON, of the city of Brooklyn, county of Kings, State of New York, have invented a new and useful Improvement in Folding Umbrellas, of which the following is a description.

This invention relates to folding umbrellas.

The objects of the invention are to improve and simplify the construction of such devices; furthermore, to increase their efficiency in operation and to decrease the expense attending their manufacture.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed as a practical embodiment thereof.

In the accompanying drawings, forming part of this specification, Figure 1 is a view, partly in section, showing an umbrella-frame constructed in accordance with the present invention, the frame being in extended condition. Fig. 2 is a view showing the frame folded in the ordinary manner. Fig. 3 is a view showing the manner of folding the frame so that the umbrella will occupy but half the accustomed space. Fig. 4 is a view showing the umbrella in a slightly more compact condition than in Fig. 3. Fig. 5 is a view showing the device in completely-folded condition.

Like reference-numerals indicate corresponding parts in the different figures of the drawings.

The reference-numeral 1 indicates an umbrella-rod which is jointed, as shown at 2, in any suitable manner, so that the two parts can be separated and folded together, as indicated in Fig. 5. Mounted upon the umbrella-rod 1 is a fixed collar 3, to which is pivotally connected a plurality of ribs which are jointed, as shown at 4, so as to form an inner section 5 and an outer section 6. Mounted upon the rod 1 is a sliding sleeve 7, to which is pivotally connected a plurality of extension-rods, such as 8. Each of the extension-rods 8 is pivotally connected at its outer end to the outer section 6 of one of the jointed ribs, as connected at 9. Pivotally attached at their inner ends with their fixed collar 3 is a plurality of connecting-rods 10, each of which is pivotally attached at its outer end to one of the extension-rods 8, intermediate the ends thereof, as indicated at 11. Mounted upon the umbrella-rod 1 and adapted to slide over the sleeve 7, as shown in Fig. 1, is a second sliding sleeve 12. Pivotally connected at their inner ends with the second sliding sleeve 12 is a plurality of brace-rods 13, each of which said brace-rods is pivotally connected at its outer end to the outer section 6 of one of the jointed ribs, as indicated at 9. The umbrella-rod 1 is provided with a pair of spring-catches 14 and 15, the purpose and operation of which are old and well known in the art.

Constructed as above described, the operation of the improved device is as follows: When the two sleeves 7 and 12 are pushed up into the position shown in Fig. 1, the umbrella-frame is in extended position. If it be desired to fold the umbrella in the ordinary manner, the catch 14 is depressed and the second sliding sleeve 12 is drawn down, as shown in Fig. 2. When it is desired to fold the umbrella completely, so that it will occupy but half its accustomed space, the two sliding sleeves 7 and 12 are drawn down, as shown in Figs. 3, 4, and 5, and the handle end of the umbrella-rod 1 is disjointed and folded, as shown in Fig. 5.

It is found in practice that employing jointed ribs, such as described, the improved umbrella of this invention has a perfect shape when in extended condition.

In order that the ribs may fold properly, it is found necessary that the connecting-rods 10 shall be of the same length as the distance between the joints 4 and 9 and that the inner sections 5 of the jointed ribs shall be of the same length as the distance between the joints 11 and 9.

The improved folding umbrella of this invention is strong, simple, durable, and inexpensive in construction, as well as thoroughly efficient in operation.

Minor changes in the precise embodiment of invention illustrated and described may be made within the scope of the following claims without departing from the spirit of the invention or sacrificing any of its advantages.

Having thus described the invention, what is claimed as new is—

1. An umbrella comprising a jointed rod, a fixed collar thereon, a sleeve slidably mounted on the rod, a runner slidably mounted on the rod, jointed ribs pivotally connected with

the collar, extension-rods connected with the sleeve and with the outer section of the ribs, brace-rods connected with the runner and with the outer section of the ribs at the point of connection of the extension-rods thereto, and connecting-rods joining the fixed collar and the extension-rods.

2. An umbrella comprising a jointed rod, a fixed collar thereon, a sleeve slidably mounted on the rod, a runner slidably mounted on the rod, jointed ribs pivotally connected with the collar, extension-rods connected with the sleeve and with the outer section of the ribs, brace-rods connected with the runner and with the outer section of the ribs at the point of connection of the extension-rods thereto, and connecting-rods joining the fixed collar and the extension-rods, the connecting-rods being equal in length to the distance between the joint of the ribs and the connection of the extension-rods thereto, and the distance between the connection of the connecting-rods and ribs with the extension-rods being equal to the inner sections of the ribs.

3. An umbrella comprising a jointed rod, a fixed collar thereon, a plurality of jointed ribs pivotally supported at their inner ends from the fixed collar, a sleeve slidably mounted on the rod, a runner slidably mounted on the rod, and unbroken and independent connections between a determinate point on the outer section of the ribs and the sleeve and runner respectively, and connecting-rods joining the collar and the connection between the sleeve and rib, whereby on a simultaneous movement of the sleeve and runner the connections from said parts will break the ribs at their joint and the rods cause said connections to assume a position practically parallel with the rod.

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