

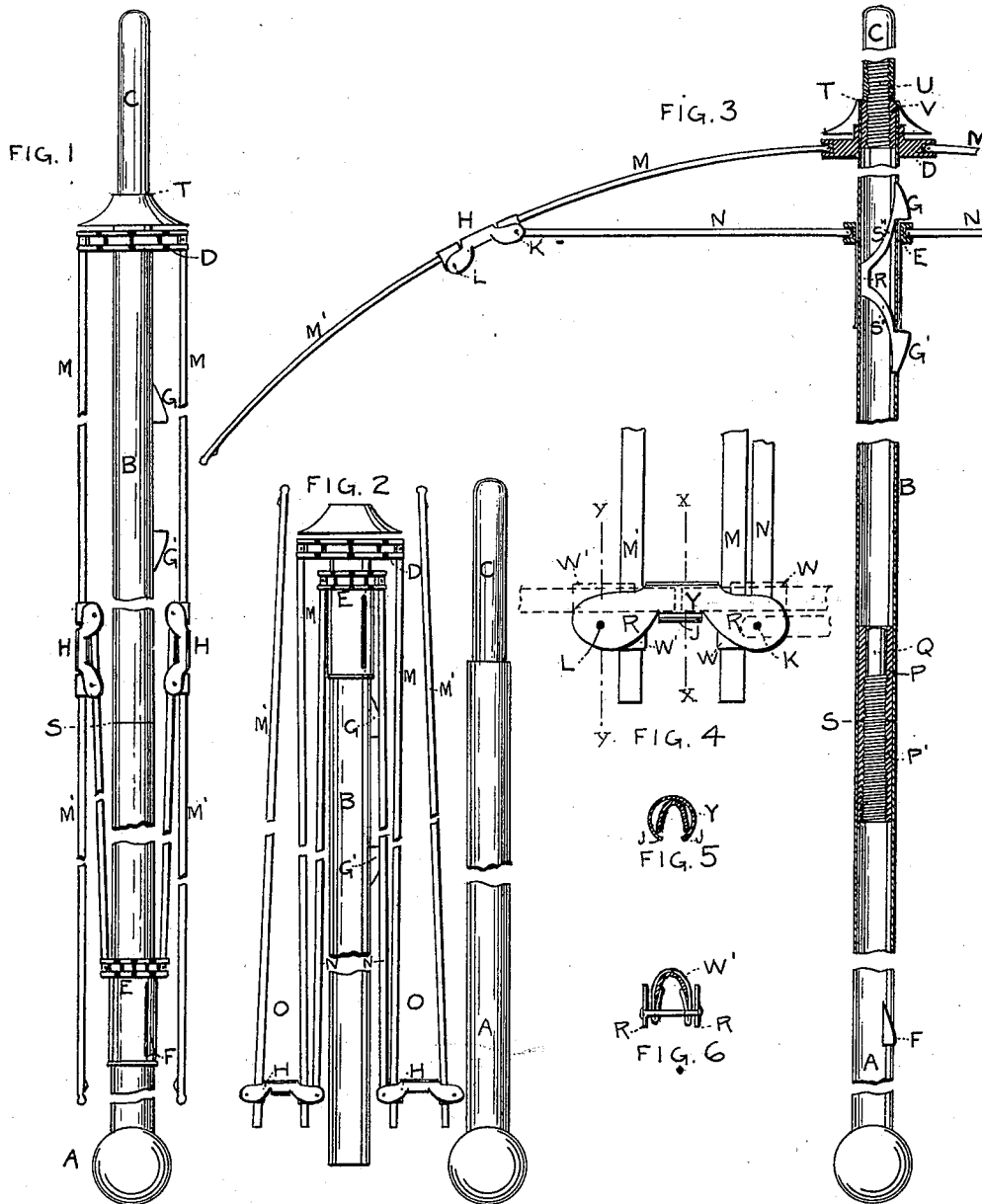
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Patented Apr. 24, 1900.

E. GODFREY.
FOLDING UMBRELLA.

(Application filed Mar. 9, 1898.)

(No Model.)



WITNESSES:

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FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 648,167, dated April 24, 1900.

Application filed March 9, 1898. Serial No. 673,158. (No model.)

To all whom it may concern:

Be it known that I, EDWARD GODFREY, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Folding Umbrellas; and I do declare the following to be a clear and full description of the nature thereof sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object a folding umbrella of light and simple construction which can be readily folded up into compact form and which may be used in all respects as an ordinary umbrella when there is no occasion for it to be folded.

To these ends my invention consists of the construction, combination, and arrangement of devices and appliances hereinafter specified and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is an elevation showing the umbrella in a closed position for carrying, the cloth covering being removed and only the ribs, with their braces, showing. Fig. 2 is a view showing the umbrella frame and handle in a folded position for packing away. Fig. 3 is a partial view showing the umbrella extended or hoisted. Fig. 4 is an enlarged detail view of the double hinge H, which joins the rib-sections M and M', showing in full lines the position of said rib-sections when the umbrella is folded and in dotted lines indicating the position of said rib-sections when the rib is extended. Fig. 5 is a sectional view on the line *xx*, Fig. 4. Fig. 6 is a sectional view on the line *yy*, Fig. 4.

The folding umbrella is provided with a stick made of three sections A, B, and C, said sections to be of thin hollow metal and so constructed that the several sections may be secured to one another, as at S and T, by means of short splicing-pieces Q and U. The said pieces have threads turned upon them, the piece Q fitting into threads tapped into short strengthening-pieces P' and P, fastened in the ends of stick-sections A and B, respectively, and the piece U fitting into threads tapped into the strengthening-piece V and

into the short section C of the stick. The splicing-piece Q is rigidly fastened into the stick-section A after being screwed into said section, or the screw-threads may be dispensed with. The strengthening-piece P' may also be omitted and the splicing-piece Q made to fit snugly into the end of stick-section A. The detail at splice T may be simplified in a similar manner by omitting the threads in piece V or by omitting said piece and making piece U to fit snugly in the end of stick-section B. I do not confine myself to the use of three sections in the stick of the umbrella.

The ring D, to which the upper ends of the ribs of the folding umbrella are attached, is made large enough in diameter to allow the runner E, which takes the inner ends of the rib-braces N, to be pushed up nearly against said ring, allowing ribs and stays to be folded without interference until parallel with the stick-section B. I do not claim any originality in the matter of this particular construction.

At the place where the runner E is to be held when the umbrella is hoisted there is a double spring-catch consisting of two shoulders G and G', two arms S'' and S', and a bearing part R. The said shoulders project through openings in the wall of the stick and are connected by the said arms to the said bearing part which bears against the inner wall of the stick. The arms S'' and S' act as springs to keep the shoulders G and G' projected through the openings and also to allow either of said shoulders to be forced into the stick and out of the path of the runner E when it is necessary for the hoisting or folding of the umbrella.

The ribs of the umbrella are in two sections M and M', of about equal length and hinged near their adjacent ends by means of a double hinge-piece H. The purpose of the double hinge is to provide the space O between the sections of the rib when the umbrella is folded, in which space the cloth covering may lie without being pinched, and also to provide means whereby the ribs may be held from doubling back when the umbrella is closed. This double hinge-piece consists of a channel Y of such shape as to receive the ends of the rib-sections M and M' and to hold them by means of spring tension at J against accidental displacement,

and four jaws R, said jaws being provided with holes at L and K, through which pins are inserted engaging the saddles W' and W, said saddles being secured to the rib-sections M' and M, respectively. The pin at K also engages the outer end of the brace N. It is this double hinge and spring combined which is the main feature of my invention. It has the advantage of lightness and simplicity of construction, allows the rib to assume a regular graceful curve when the umbrella is hoisted, may be adapted to the channel-ribs used in the lightest umbrellas, does not create a weak point in the rib, does not depend upon a spring to hold the rib in line when the umbrella is hoisted and there is special strain upon the ribs, and holds the rib in line by means of a spring when the umbrella is closed, and no special strain, except by accident, is liable to come upon the ribs.

When it is desired to fold or unfold the umbrella, each rib must be grasped in the hands on each side of the hinge-piece H and firmly pressed into position or released from the spring, which clasps the ends of rib-sections as desired.

It is not essential that the pin at K act as a hinge for the brace N. This brace may have a hinge at another point on the rib-section M or take another pin in the hinge-piece H.

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

1. A double hinge-piece H for the rib of a folding umbrella consisting of—(a) four jaws R having holes at L and K, said holes to receive pins engaging respectively the rib-sections M' and M near the adjacent ends of said sections, pin at K to engage also the outer end of rib-brace N; (b) a channel Y to receive the ends of rib-sections M' and M, said ends to bear against said channel when rib is in extended position, and said channel to have walls with spring tension sufficient to hold ribs in extended position against accidental displacement, substantially as described.

2. A double hinge-piece for the rib of a folding umbrella having four jaws R taking pins L and K which engage rib-sections near the ends of same and having stop for said ends at their positions when rib is extended, same preventing rib from being bent inward, and having a spring to hold said ends in said positions against bending of rib outward, except when force is exerted releasing said spring.

3. In a folding umbrella, the combination of a stick in two or more sections, ribs formed

of upper and lower sections M and M', joined by means of a double hinge-piece H, said hinge-piece having a channel Y and four jaws R with pins at L and K to engage said rib-sections near adjacent ends of same, said channel Y receiving adjacent ends of rib-sections, said ends bearing against back of said channel to prevent bending downward of the rib when extended, said ends further held in place against accidental displacement by spring tension in walls of said channel, means to lock the runner E at desired position when the umbrella is hoisted, braces hinged at their outer ends to rib-sections M or hinge-piece H and arranged to fold upward, substantially as described.

4. In a folding umbrella, the combination of a stick of thin metal in two or more sections spliced by means of a central piece Q, said piece secured into end of one section and screwing into end of other section, ribs formed of upper and lower sections M and M', joined by means of a hinge-piece H, said hinge-piece having jaws R, said jaws taking pins, which engage said rib-sections near the adjacent ends of said sections, said hinge-piece H to have a channel Y, for receiving and holding against displacement the adjacent ends of said rib-sections, braces N attached by a hinge to the rib-sections M and arranged to fold upward, means to lock the runner E at desired position when the umbrella is hoisted, substantially as described.

5. In a folding umbrella, the combination of a stick in two or more sections, ribs formed of upper and lower sections M and M', joined by means of a double hinge-piece H, so constructed as to form a hinge-joint for each of said rib-sections near their adjacent ends, allowing ribs to be doubled outward when force is exerted releasing a spring in said hinge-piece which holds ends of said rib-sections, at the same time holding the adjacent ends of said sections, independent of said spring, against any motion that will allow the ribs to be doubled inward or distorted, means to lock the runner in desired position when umbrella is hoisted, braces hinged to rib-sections M at outer extremities of said braces, and same arranged to fold upward, substantially as described and for the purpose set forth.

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

EDWARD GODFREY.

Witnesses:

JOSEPH FELTWELL,
JAS. B. GODFREY.