

(No Model.)

R. V. HILL.
UMBRELLA.

No. 596,752.

Patented Jan. 4, 1898.

Fig. 1.

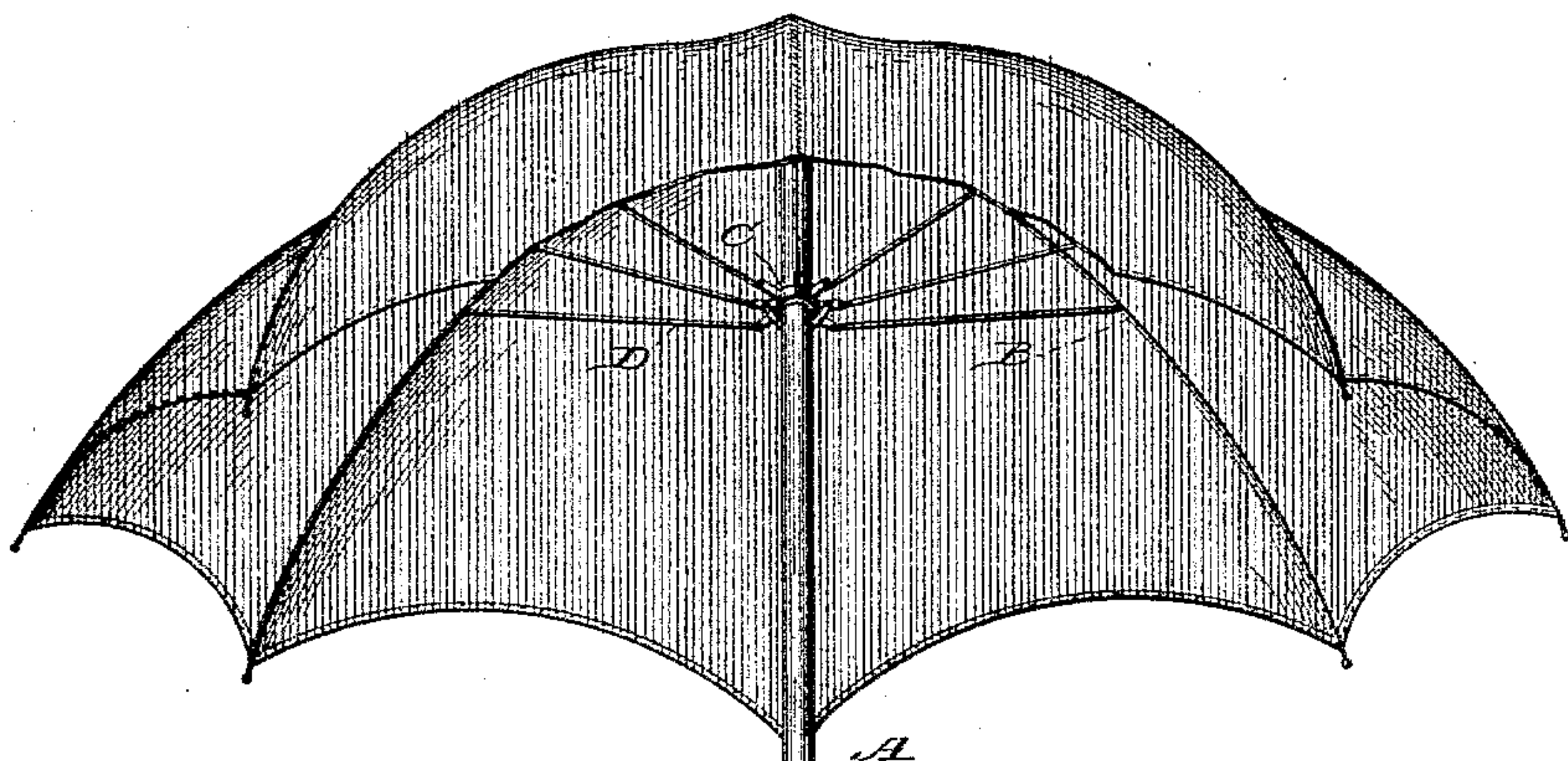


Fig. 2.

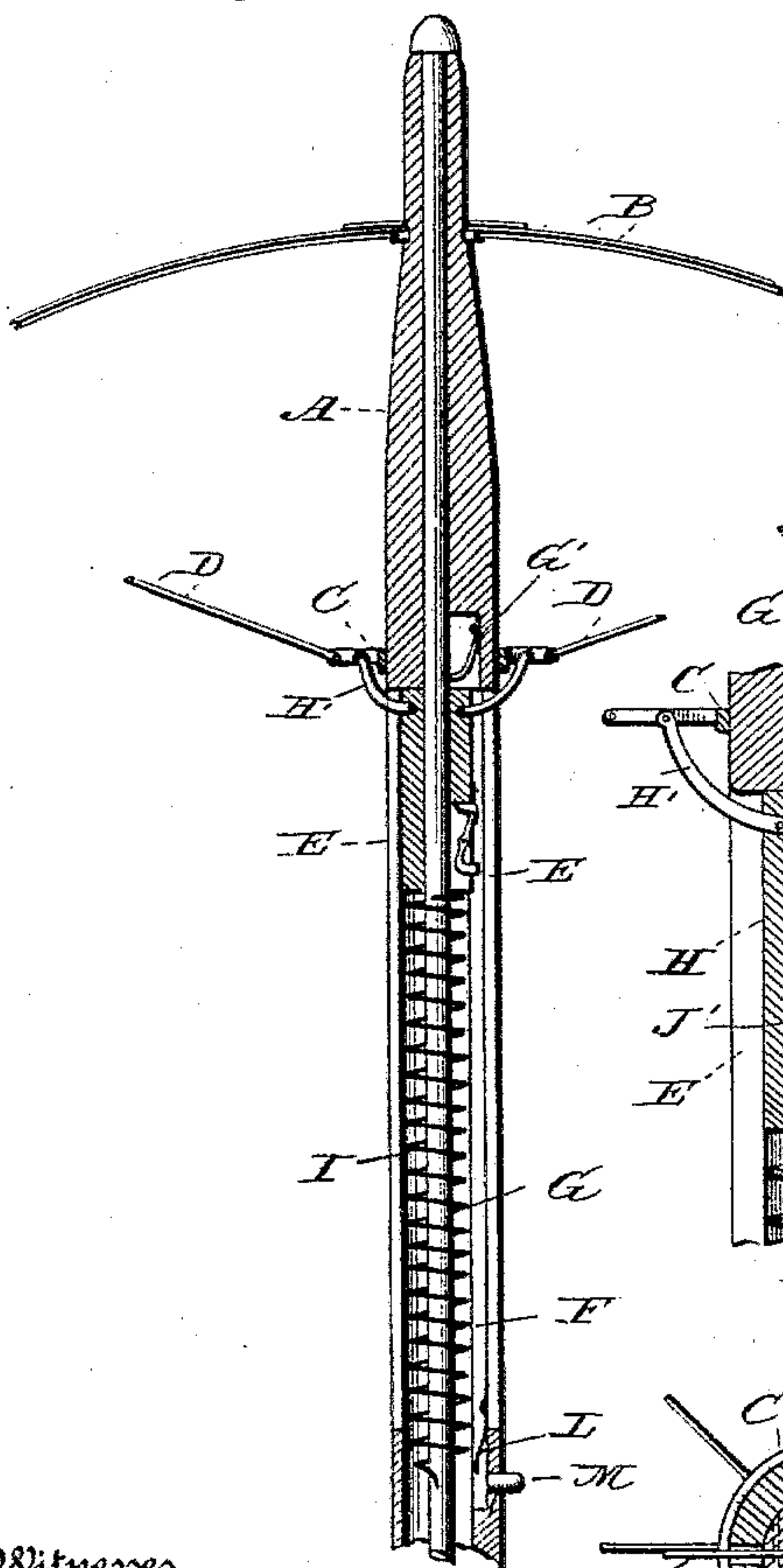


Fig. 3.

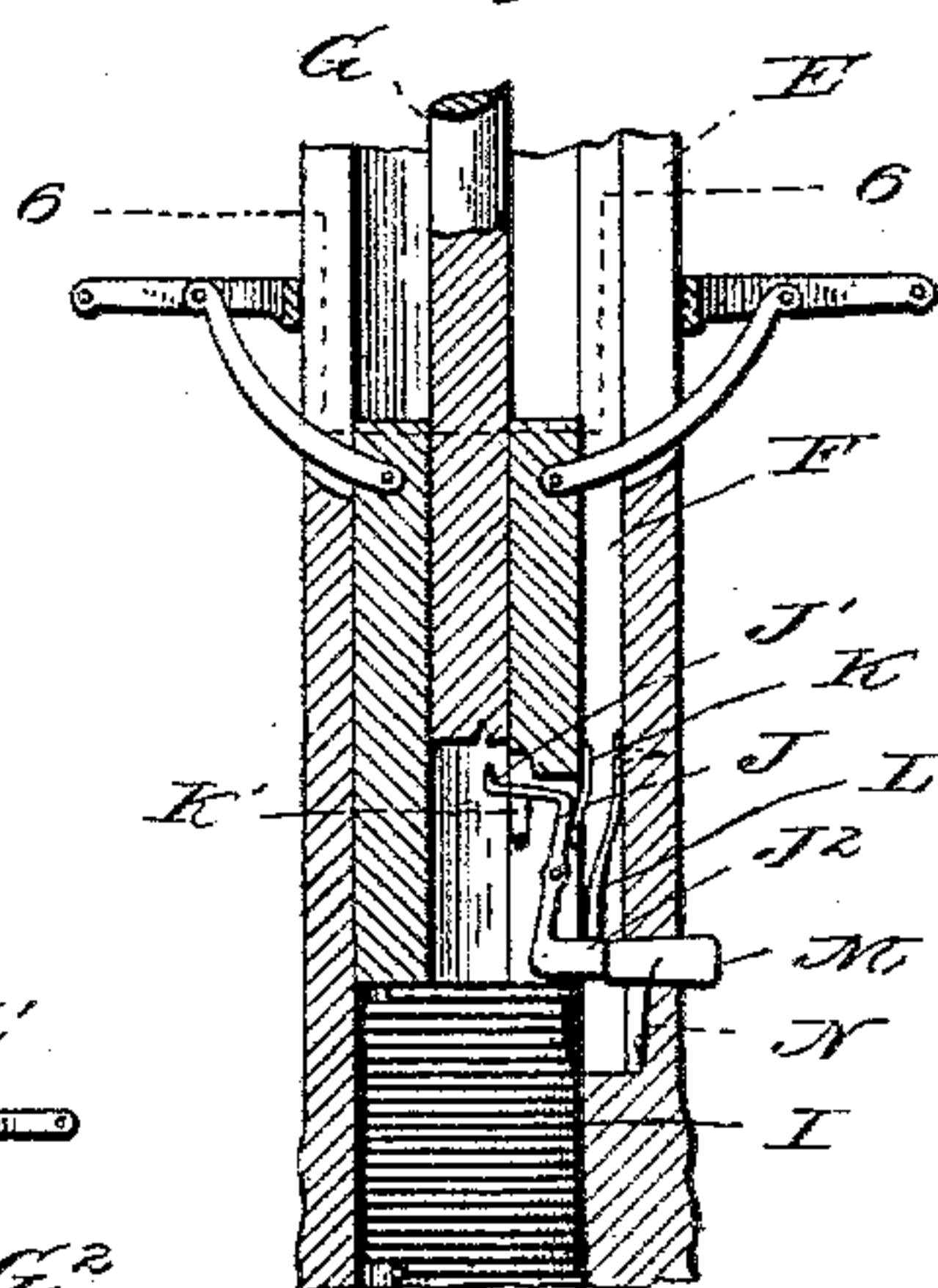


Fig. 5.

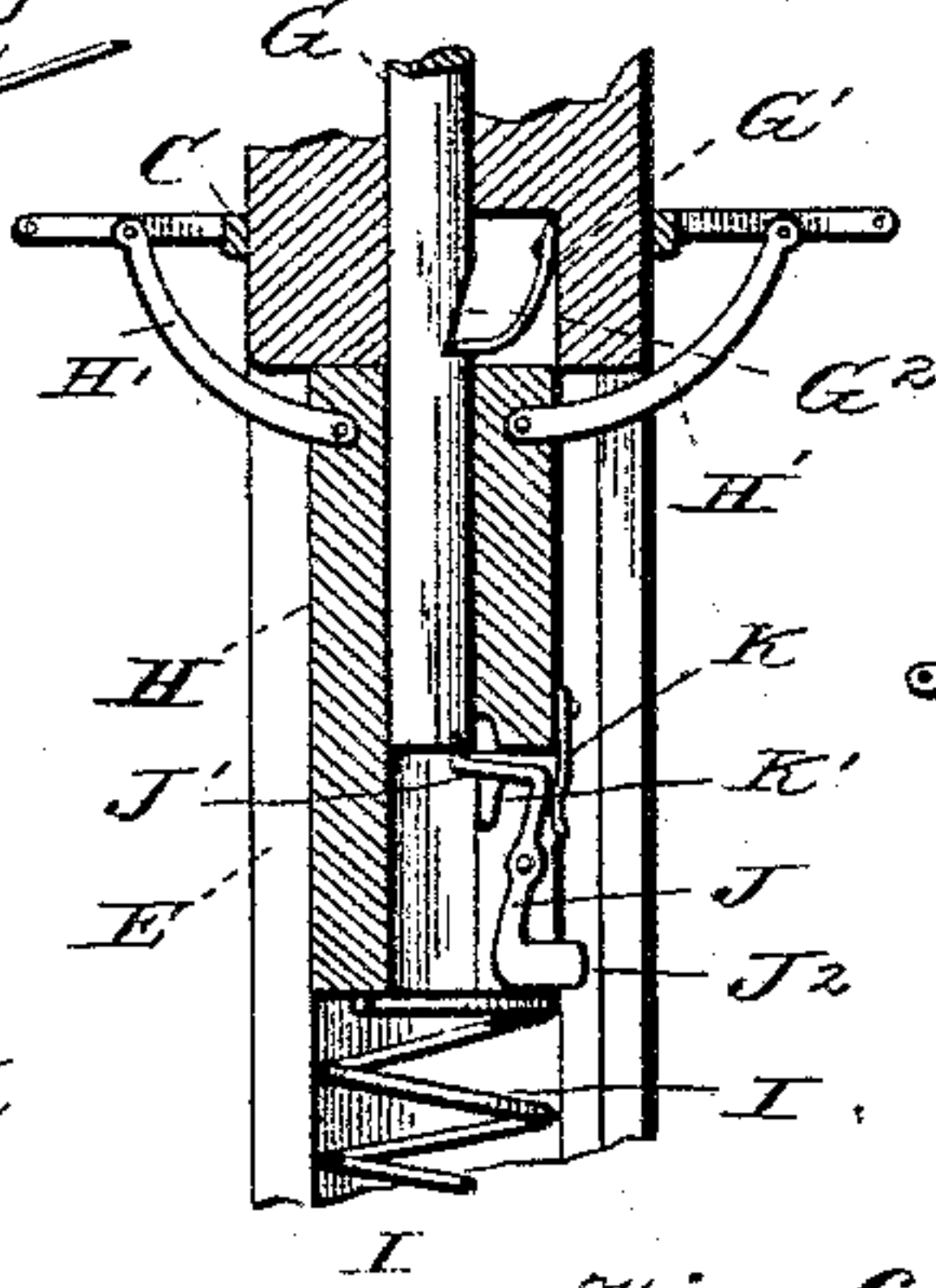


Fig. 4.

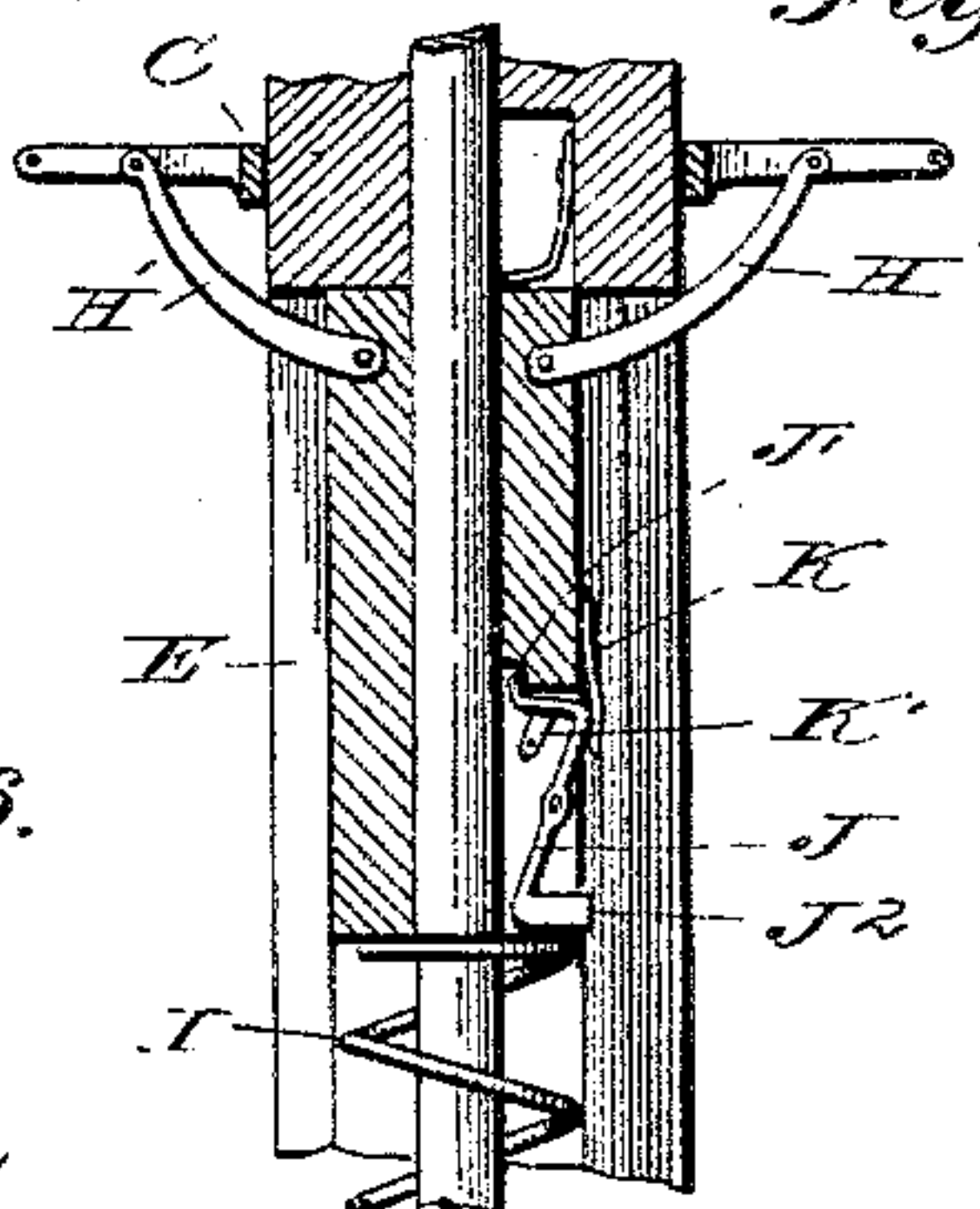
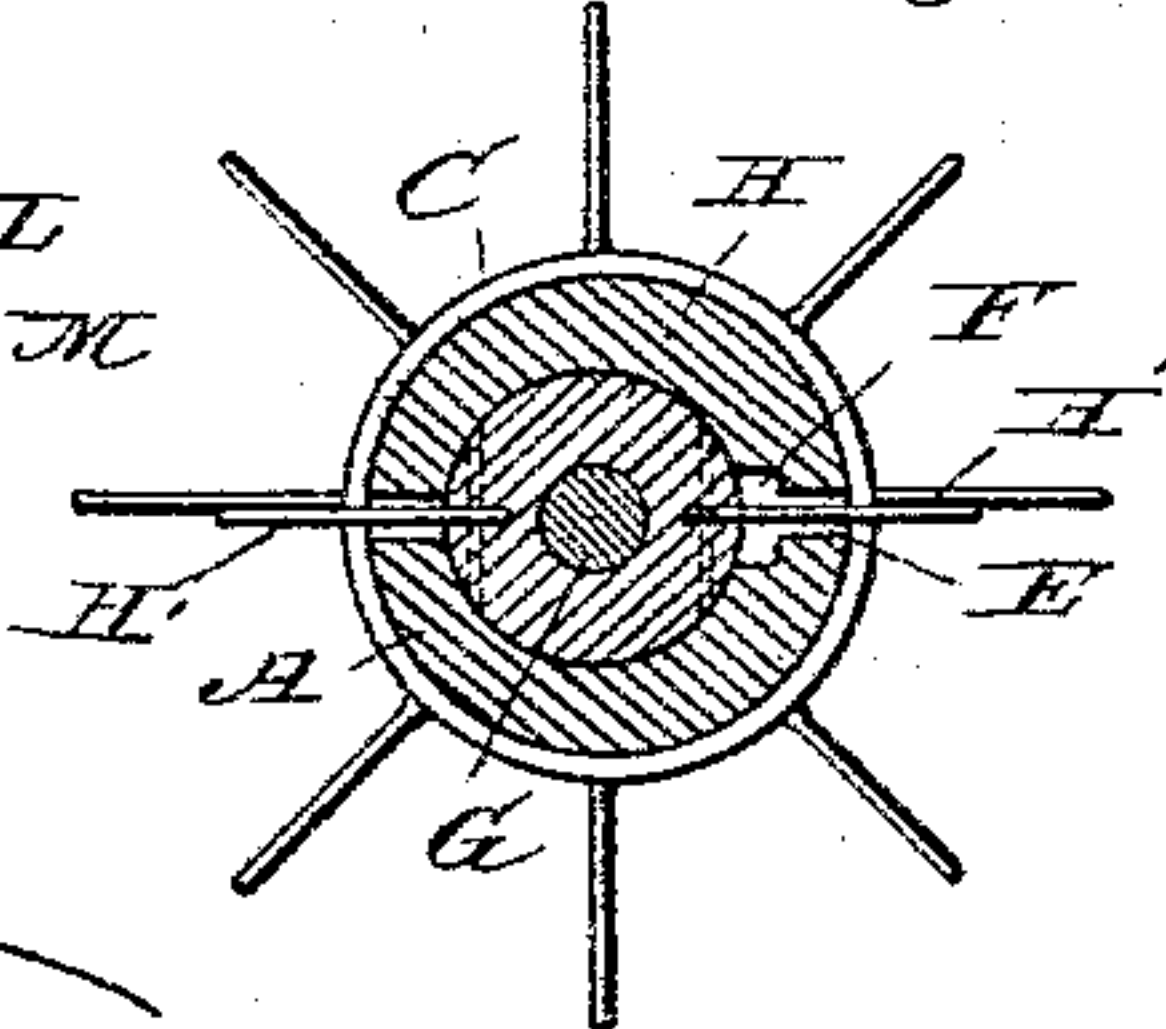


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

ROYAL V. HILL, OF MOOSE LAKE, MINNESOTA, ASSIGNOR OF ONE-HALF TO
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UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 596,752, dated January 4, 1898.

Application filed April 24, 1897. Serial No. 633,619. (No model.)

To all whom it may concern:

Be it known that I, ROYAL V. HILL, residing at Moose Lake, in the county of Carlton and State of Minnesota, have invented a new and useful Umbrella, of which the following is a specification.

My invention relates to umbrellas; and the object thereof is to produce an umbrella which can be closed with one hand and when closed it can be automatically opened. I accomplish this by providing a tube or hollow rod, in which I locate a sleeve or plunger connected with the runner, to which the stretchers of an umbrella are connected, and providing a sliding rod within the tube, which is dropped out of the tube to force the sleeve toward the handle when it is desired to close the umbrella. As the sleeve is pushed down it compresses a spring, and it is held in its lower position by an automatic catch, which is released by a button carried in the tube to allow the spring to force the sleeve upward and open the umbrella.

My invention also consists of certain other details of novel construction that will be hereinafter more fully described, and specifically pointed out in the claims.

In order that my invention may be fully understood, I will proceed to describe the same with reference to the accompanying drawings, in which—

Figure 1 is a view of an open umbrella constructed according to my invention. Fig. 2 is a sectional view of the upper part of the rod. Fig. 3 is an enlarged detail section taken near the handle of the umbrella and showing the sliding sleeve in its lower position. Fig. 4 is an enlarged detail section of the upper part of the rod and showing the sliding sleeve in its upper position. Fig. 5 is also an enlarged detail section of the upper part of the rod and showing the means for holding the sliding rod, and Fig. 6 is a detail cross-section taken on the line 6 6 of Fig. 3.

In the said drawings, A represents a tube or hollow rod, to which the ribs B are pivoted at one of their ends and on which the runner C slides, to which are pivoted the stretchers D, as is usual in umbrellas. The tube is further provided with the oppositely-arranged slots E, the recessed portion F, and the handle F'.

Extending centrally through the tube is the sliding rod G, and it is held from dropping out of the umbrella when it is turned by means of the spring G', located in a recess in the upper part of the tube, engaging a notch G² at the lower end of the rod.

Working within the tube A is a sleeve or plunger H, connected by means of the arms H', which fit in the slots E, to the runner C. As this runner is pushed down in the tube to the lower end thereof by the rod G, as hereinafter explained, it draws the runner down with it and in this manner closes the umbrella. As the plunger or sleeve is pushed down it compresses the spiral spring I (see Fig. 3) at the lower end of the tube, and it is held in this position until released by suitable means, when the spring I expands, forcing the sleeve to the upper end of the tube to open the umbrella.

The means for holding the sleeve in its lower position consists of the following parts: Pivoted within a slot or recess in the sleeve is a lever J, preferably of the form shown, so that one end J' will be in the path of the end of the rod G, while its other end J² works in the groove F, formed for it in the tube A. The end J' is forced inward by a spring K, secured to the sleeve, and it rests upon a pivoted lug K', which serves to take off the strain from the pivot-point of the lever when the sleeve is being pushed down. When the sleeve is pushed down, the end J² of the lever J is engaged by a spring L, secured at one end to the tube A, (see Fig. 3,) which serves to hold the sleeve in its lower position and against the action of the spring. M represents a button held in the tube A by the spring F, and it is adapted to engage the end J² when it is pushed in, which causes the end to be disengaged from the spring and allow the spring to force the sleeve up.

The manner of operating the umbrella is as follows: Assuming that the umbrella is open, the several parts will be in the position shown in Figs. 2 and 4. To close the umbrella, it is turned cover down to let the rod G slide out of the tube for a short distance, so as to let the end J' of the catch J come into the path of the rod. (See Fig. 5.) The rod is then forced into the tube A by placing it against the wall

or floor, so as to push the sleeve down and in this manner close the umbrella. When the rod is pushed in, the parts are in the position shown in Fig. 5. When it is desired to raise the umbrella, the button or knob is pushed upon, which disengages the catch from the spring and allows the coil-spring to force the sleeve up. The umbrella is held open by means of the spring.

10 From the foregoing it will be seen that I have provided an umbrella which can be manipulated with one hand to close it and which can be opened automatically.

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

1. The combination in an umbrella, of a tubular supporting-rod, a runner, stretchers having their inner ends pivoted upon said runner and their outer ends pivoted to the ribs of the cover, a sleeve-plunger within said tubular rod, diametrically opposite arms projected from said sleeve through vertical slots in the tubular rod and having their outer ends secured to the runner, a spiral spring within said tubular rod below said sleeve-plunger adapted by its resilience to force upwardly said runner and open the umbrella, a rod

projected through said supporting-rod and adapted to depress said sleeve and the sleeve in turn to depress said spiral spring so as to effect the closing of the umbrella, and a system of catches as shown for retaining the umbrella in its closed position, the whole constructed, arranged and adapted for operation substantially as shown and described.

2. The combination in an umbrella, of a tubular supporting-rod, a sleeve within said rod, an inner sliding rod, connections between the sleeve and the runner, stretchers connecting the runner with the ribs of the umbrella-frame, a spiral spring in the tubular supporting-rod having its upper end bearing against the lower end of the sleeve, a latch for holding said spring in a contracted position when the umbrella is in a closed position, means for releasing said spring so as to force upwardly said sleeve and the runner and thus open the umbrella, the whole constructed and its several parts adapted to operate substantially as and for the purpose herein set forth and shown.

ROYAL V. HILL.

Witnesses:

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