

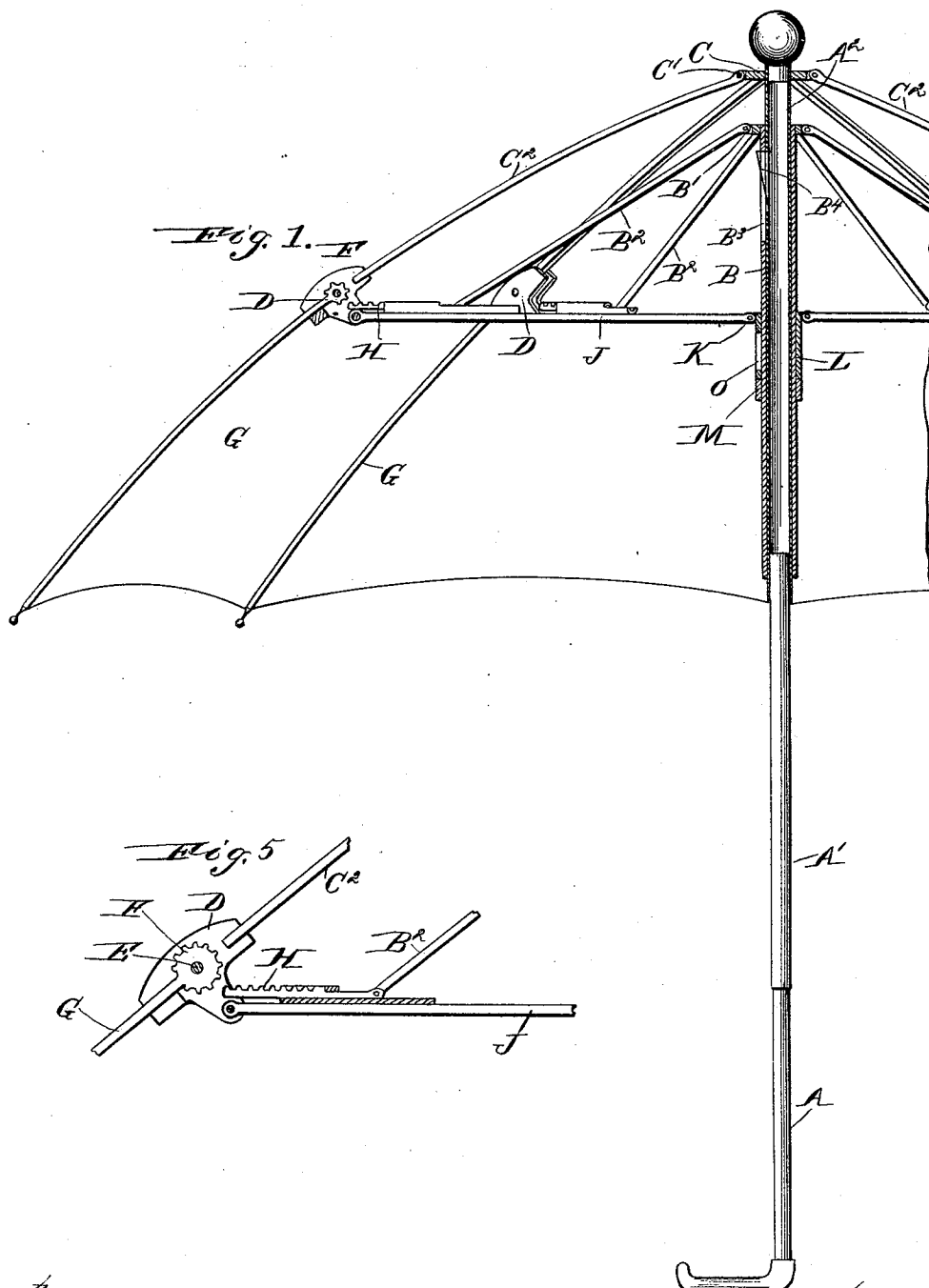
(No Model.)

2 Sheets—Sheet 1.

T. HILLABOLD.
FOLDING UMBRELLA.

No. 500,330.

Patented June 27, 1893.



Witnesses:
Wallis J. Guntorp
Edith Black

Inventor:
Tilman Hillabold
By Francis W. Parker, Atty

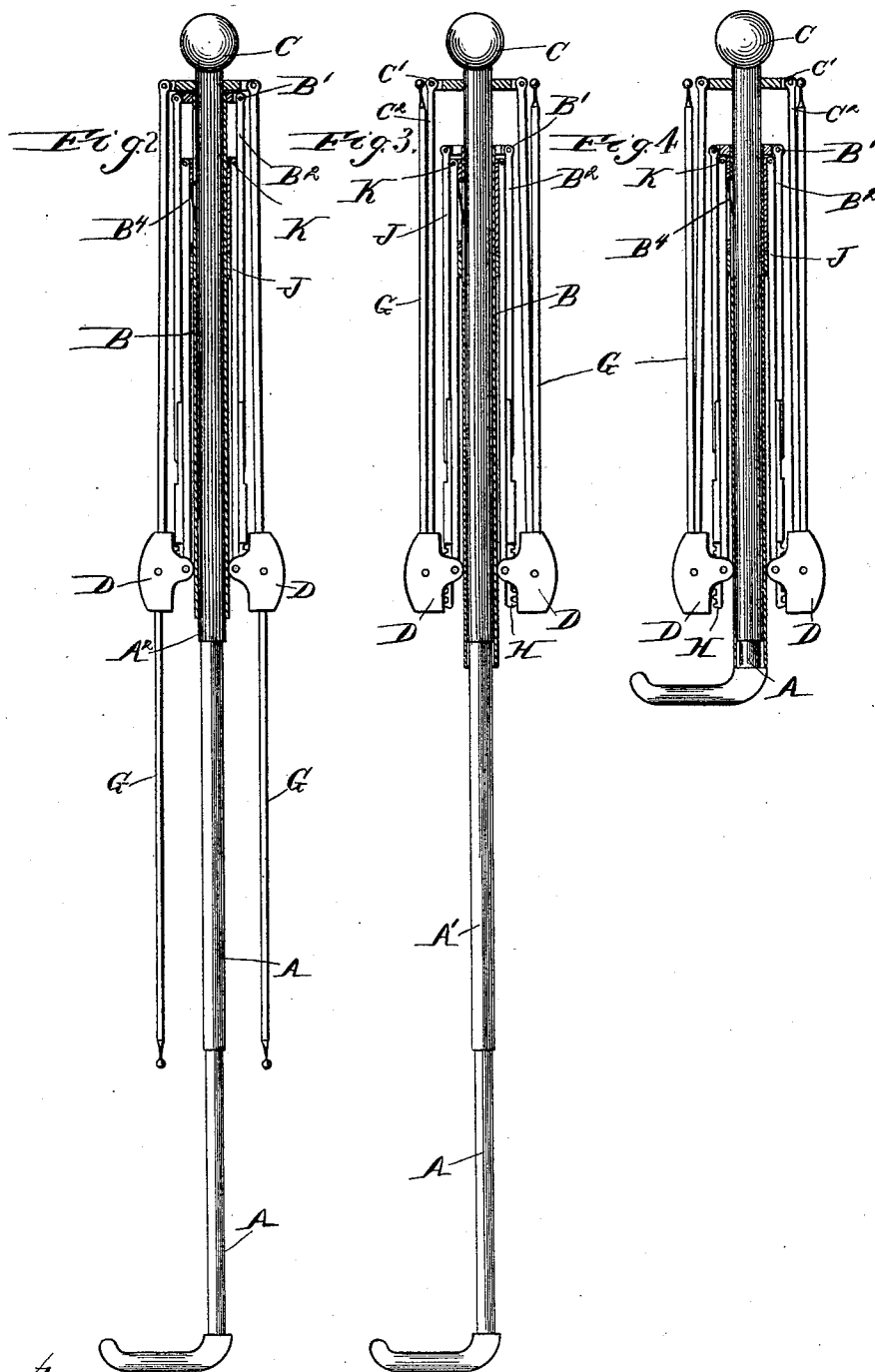
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UNITED STATES PATENT OFFICE.

TILMAN HILLABOLD, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
WILLIAM C. HILLABOLD, OF SAME PLACE.

FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 500,330, dated June 27, 1893.

Application filed October 1, 1892. Serial No. 447,568. (No model.)

To all whom it may concern:

Be it known that I, TILMAN HILLABOLD, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented a new and useful Improvement in Folding Umbrellas, of which the following is a specification.

My invention relates to folding umbrellas, and has for its object to provide convenient and simple means whereby an umbrella may be folded so as to occupy very little space and be inserted in a grip or the like. It is illustrated in the accompanying drawings, wherein—

Figure 1, is a cross section through the umbrella, the same being extended for use. Fig. 2, is a view of the umbrella skeleton, closed for use as a walking stick. Fig. 3, is a similar view with the ribs folded. Fig. 4, is a view of the skeleton of the umbrella, with the latter folded.

Like parts are indicated by the same letters in all the figures.

A, A', A² are the telescopic portions of the stick or handle, suitably associated so as to slide one in the other and provided with catches, if desired.

A³ is the end of the handle or stick, rigid upon the portion A².

B is a long sliding sleeve on the stick portion A², and provided at its upper end with the securing collar B', into which the braces B² B² are secured in the usual manner. This sleeve B is slotted at B³ and limited in its motion by the spring stop B⁴, projecting from the stick portion A².

On the upper end of the stick portion A² is the cup shaped piece C and the securing collar C', to which the upper ends of the ribs C² are secured. To the lower ends of these ribs C² are rigidly secured the double-plate pieces D, having within them a short shaft E, carrying a pinion F and a lower folding rib portion G.

H is a rack, adapted to slide between the portions of the double plate piece D and engage the pinion F and secured to, so as to be moved by or from, a brace portion B². The

rack H is adapted to slide in a suitable way on the stretcher J. The stretcher J is secured at its inner end to the securing collar K on the upper end of the ferrule or sleeve L. The ferrule L may be of any desired length and it slides upon the outside of the sleeve B. M is a stop which limits its downward motion. O is a slot in its side through which the spring stop D⁴ may pass when it is sufficiently elevated. These several parts could be suitably altered without departing from the spirit of my invention.

The use and operation of my invention are as follows: Assuming that the umbrella is in the position indicated in Fig. 1, it can be used as an ordinary umbrella. If now it be desired to fold the same so as to use it for a walking stick or set it aside, it is done by pushing upwardly on the ferrule L, thus carrying up the inner ends of the stretchers K K and by the relation of the same with the braces B², carrying up the upper securing collar B' until these two securing collars assume the position indicated in Fig. 2, where they are somewhat separated. The upper one is at the highest position and the lower stretcher K is held in its elevated position by the engagement of the spring stop B⁴ with the slot O. If, now, it is desired to fold up the umbrella, it is done by drawing down on the long sliding sleeve B, thus carrying the securing ring B' downward until it engages the securing ring K. This motion, however, carries downwardly the central braces B² B² and with them the racks, so that the racks engage the several pinions, thus rotating the latter; and since the lower portions of the ribs are rigid with such pinions, the rotation of the pinions will turn the ribs up into the position shown in Figs. 3 and 4. This folds the umbrella, except as to the handle. The telescopic portions of the handle may now be run together, and the whole device will be securely and compactly folded up. When it is to be extended for use, the long sleeve is pushed upwardly, thus carrying up the braces and racks and moving the pinions and throwing down the ribs into the position

shown in Fig. 2. By now raising the inside ferrule, or the one associated with the stretchers, the umbrella will be extended.

I claim—

- 5 In a folding umbrella the combination of a series of folding ribs in sections, the two sections pivotally connected about midway of the rib, with two sliding securing rings, one associated with the stretcher, the other with

the rib-folding mechanism, said rings normally separated, and connections whereby when they are brought together the sections of the ribs are folded together.

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