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UMBRELLA.

APPLICATION FILED OCT. 23, 1908.

1,098,027.

Patented May 26, 1914.

2 SHEETS—SHEET 1.

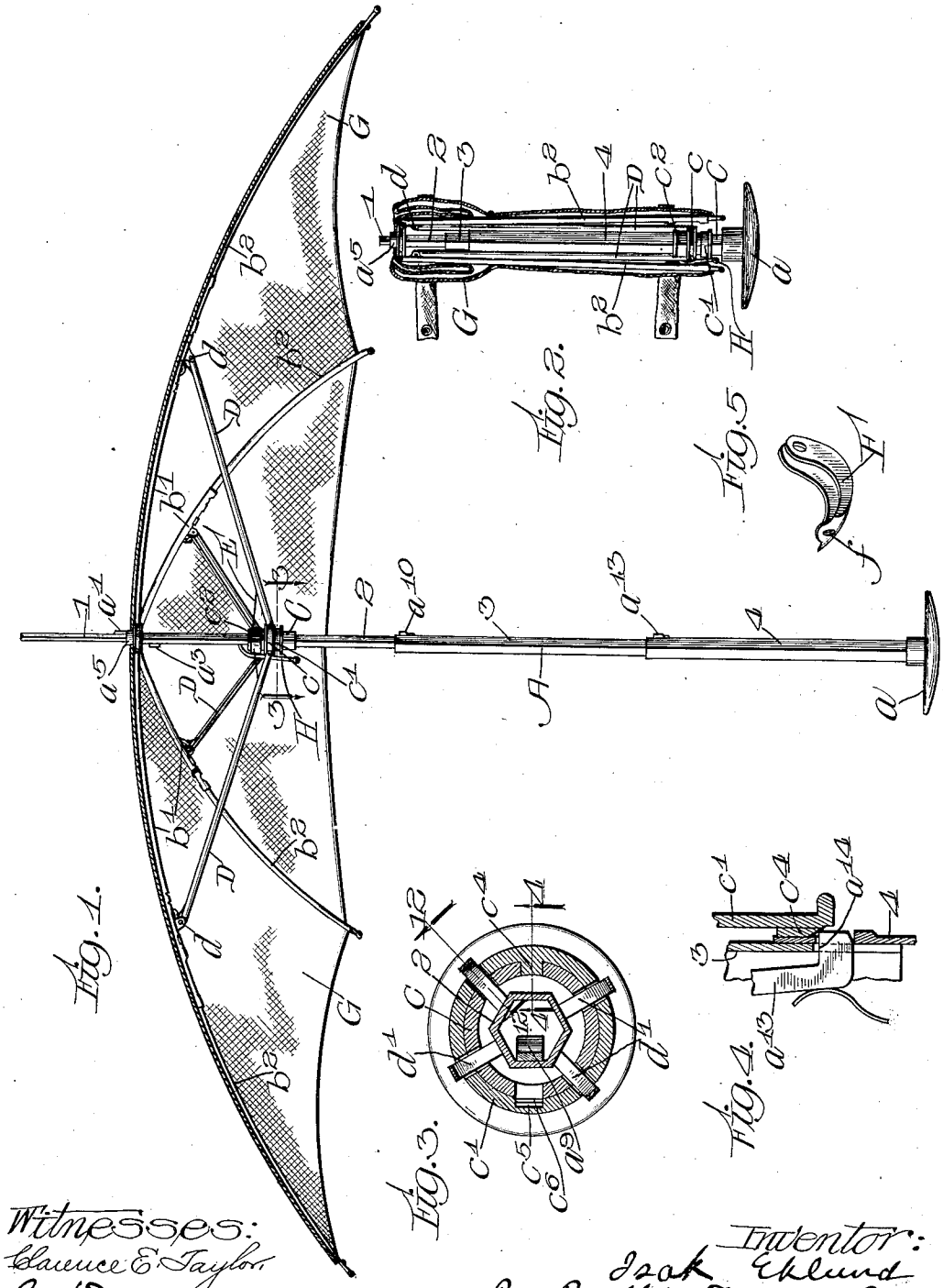


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

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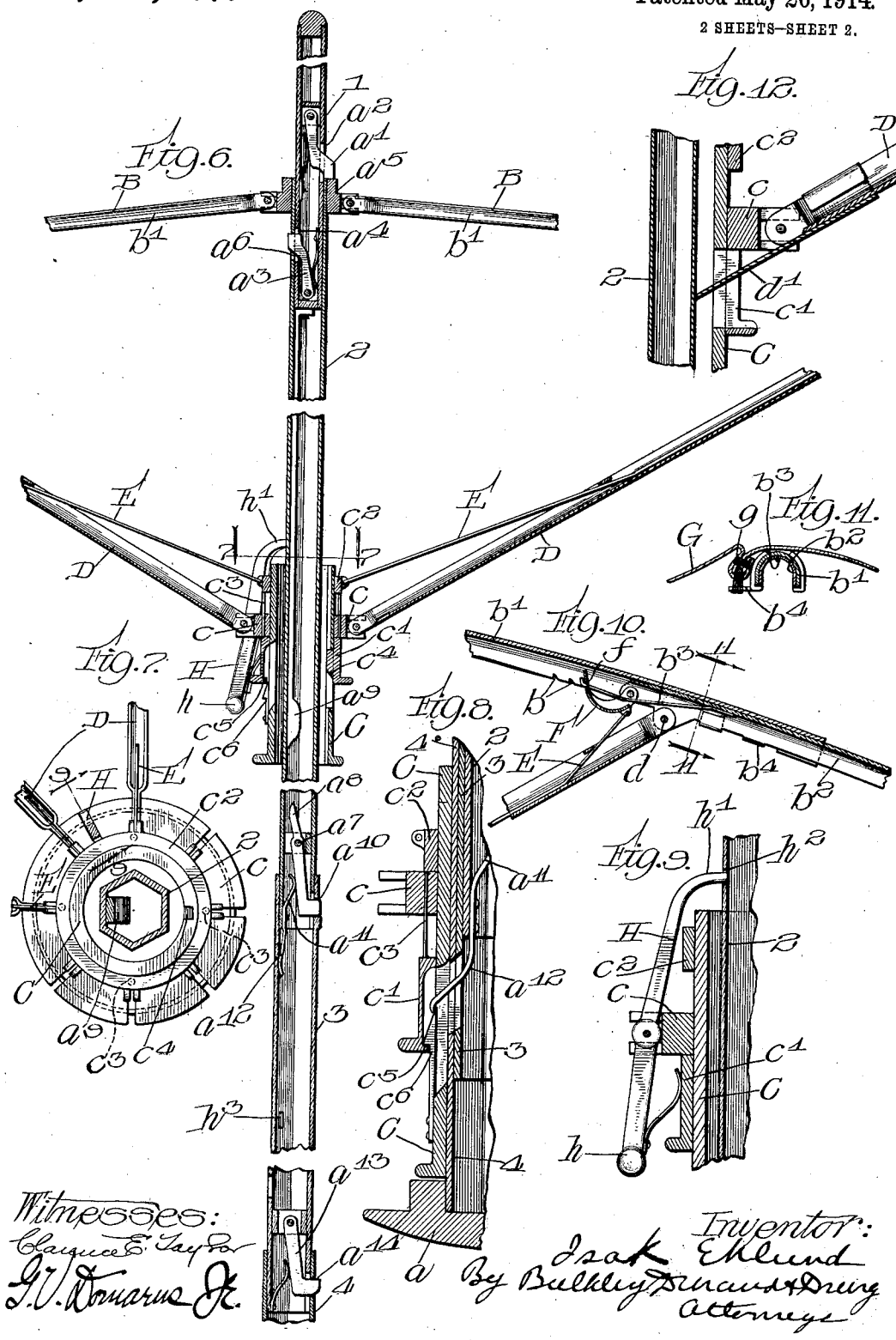
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ISAK EKLUND, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE POCKET UMBRELLA COMPANY, A CORPORATION OF OHIO.

UMBRELLA.

1,098,027. Specification of Letters Patent. Patented May 26, 1914.

Application filed October 23, 1908. Serial No. 459,120.

To all whom it may concern:

Be it known that I, ISAK EKLUND, a subject of the King of Sweden, and resident of Chicago, Cook county, Illinois, have invented a certain new and useful Improvement in Umbrellas, of which the following is a specification.

My invention contemplates an umbrella which will not only open and close in the ordinary manner, but which will also fold and unfold, whereby it can be reduced in size to an extent that will permit it to be carried in a satchel or trunk, or even in the coat pocket or other small receptacle, whereby it can be easily and conveniently disposed of or carried about when not in use.

Objects of my invention are the provision of an umbrella of this character that may be folded or unfolded in an easy and convenient manner, and without danger of injuring the parts or tearing the covering, and which can be opened and closed in the ordinary manner; the provision of an arrangement whereby the stick of the umbrella may be collapsed by telescoping the different portions within each other, and whereby the ribs of the umbrella may be reduced in length by a similar telescoping operation, when it is desired to fold the same; the provision of an arrangement whereby the umbrella may be folded or reduced in size without detaching any of the parts thereof, and whereby the unfolding of the same will not require more than a minimum number of manipulations or operations of the different parts thereof; and the provision of certain details and novel features and combinations tending to increase the general efficiency of an umbrella of this particular character.

To the foregoing and other useful ends, my invention consists in matters hereinafter set forth and claimed.

In the accompanying drawings:—Figure 1 is a side elevation of an umbrella embodying the principles of my invention, showing the top or cover in section. Fig. 2 shows the umbrella completely folded. Fig. 3 is an enlarged cross section on line 3—3 in Fig. 1. Fig. 4 is a detail section on line 4—4 in Fig. 3. Fig. 5 is a detail perspective view of one of the dogs employed for holding the ribs in extended position. Fig. 6 is an enlarged sectional view of the umbrella showing the top open as in Fig. 1, with certain portions broken away for convenience of illustration. Fig. 7 is a cross section on line 7—7 in Fig. 6. Fig. 8 is a detail sectional view of one side of the stick and the runner, showing the same in the folded condition shown in Fig. 2, illustrating a certain operation hereinafter to be described. Fig. 9 is a detail section on line 9—9 in Fig. 7. Fig. 10 is a detail sectional view of the jointed portion of one of the ribs. Fig. 11 is an enlarged section on line 11—11 in Fig. 10. Fig. 12 is an enlarged section on line 12—12 in Fig. 3.

As thus illustrated, my invention comprises an umbrella stick A composed of four telescoping sections 1, 2, 3 and 4, the latter being provided with a handle a. In cross section the said stick is preferably hollow and hexagonal in form, as shown more clearly in Figs. 3 and 7, whereby the different sections are adapted to telescope within or upon each other without turning or twisting relatively to each other. The upper section 1 is provided with an interiorly pivoted and spring pressed dog a' adapted to project through an opening a^2 in the side of the section, and is also provided with a similar dog a^3 adapted to project through an opening a^4 in the said section, the first dog being pivoted at its upper end and the latter at its lower end. The section 2 is provided with a head a^5, to which are pivoted the ribs B, and is also provided with an opening a^6 for the dog a^3. When the umbrella is unfolded, the dog a' rests upon the top of the head or collar a^5, while the dog a^3 rests in the opening a^6, and thus the sections 1 and 2 are held against endwise movement.

The section 2 is provided with a dog a^7 pivoted at its upper end within said section and provided with a tail a^8. It will be seen that this tail a^8 is adapted to be engaged by the cam finger a^9, which is carried by the section 1. This dog a^7 is adapted to engage the opening a^{10} in the section 3, and is operated by a spring a^{11}, in the manner shown. This spring, however, has a lower end portion a^{12}, the purpose of which will hereinafter appear. When the sections 1 and 2 are telescoped one within the other, by pressing in or disengaging the dog a', the cam finger a^9 engages the tail a^8 and thereby locks or disengages the dog a^7 from the section 3, permitting the section 2 to telescope within

the section 3, in the manner indicated. The section 3 is provided with a dog a^{13}, which is pivoted at its upper end and operated by a spring, said dog adapted to engage an opening a^{14} in the section 4, whereby the sections 3 and 4 are held in their extended or lengthened position.

The runner C is provided with a collar c, to which are pivoted the lower ends of the stretchers D, which stretchers serve to support the ribs B in the usual manner. The said runner is also provided with a movable sleeve c' connected with another movable sleeve c^2 by means of wires or small rods c^3, which latter move up and down in small openings in the collar c. To the sleeve c^2 are attached the wires E which travel back and forth in the hollow or trough-like stretchers for the purpose of operating the dogs F, by means of which the ribs B are held in their extended or lengthened positions, as will hereinafter more fully appear. The sleeve c' has a cam portion c^4 that engages the outer end of the dog a^{14} when the umbrella is folded, and whereby the sections 3 and 4 are automatically unlocked and allowed to telescope one within the other. The sleeve c' also has a shoulder c^5 that is adapted to engage the hook or spring dog c^6 on the runner, whereby the sleeve c' when pulled down will automatically be locked in such position relative to the runner C, which operation causes the wires E to release the dogs F from the notches b in the ribs, whereby the latter are telescoped or shortened. For this purpose the said ribs are composed of inner and outer sections b'—b^2, being made hollow or trough-like in cross section, and the dogs F are pivoted upon the inner ends of the outer sections b^2, in the manner shown. The stretchers D have their outer ends pivoted at d to the inner end portions of the sections b^2, and the latter are provided with springs b^3 that engage the openings f in the dogs F to hold the latter in engagement with the said notches b and the inner sections b', whereby the ribs are locked in their extended or lengthened positions. The said ribs are provided with lugs b^4, and the silk or other covering of the umbrella top G is provided with loops or ribs in which are inclosed cords g, which cords are sewed to the ears or lugs b^4, thus furnishing a strong and simple method of attaching the silk or other covering to the ribs of the umbrella, and insuring against injury to the same when the umbrella is opened and closed or folded and unfolded. The stretchers D, or some of them, are provided at their inner ends with portions d' that project through the sides of the runner C, and also through slots in the sleeve c', to engage the sides of the section 2 of the stick, thus centering the runner upon the said stick, in the manner shown more clearly in Fig. 12; it being observed that the space between the slide and the stick at this point is necessary to enable the slide to telescope upon the larger section 4 when the umbrella is folded.

When the umbrella is unfolded, it can be raised and lowered in the ordinary manner. The runner C is provided with a pivoted lever H, which has a handle portion h and an engaging portion h', in the manner shown more clearly in Fig. 9. When the umbrella is opened, the engaging portion h' enters an opening h^2 in the section 2 of the stick. When the umbrella is closed, then the engaging portion h' enters an opening h^3 in the section 3 of the stick, thus holding the ribs and their covering in closed condition. This lever is easily operated by its handle h to either open or close the umbrella.

In folding the umbrella, the stick portion thereof is first telescoped, in the manner already explained, and in doing this the portion a^{12} strikes the hook or spring dog c^6, in the manner shown in Fig. 8, thus unlocking the sleeve c' from the said hook or dog, and allowing said sleeve c' and sleeve c^2 to spring back to their normal positions—that is to say, to the positions shown in Fig. 6—relative to the runner C, it being observed that this is due to the pull or tension imposed on the wires E by the springs b^3. Consequently, when the umbrella is again unfolded, the dogs F are then in condition to catch in the notches b on the ribs, holding the latter in their extended or lengthened positions.

Thus it will be seen that the entire operation of the umbrella is automatic throughout, that no parts are detached when the same is folded, and that the construction is strong and certain in action, and that the size of the umbrella after it is folded is such that it may be conveniently placed in a satchel or other receptacle, or even in the pocket of the user.

What I claim as my invention is:

1. In an umbrella, a stick, a runner mounted on the stick, ribs made in sections, means for locking the rib sections in extended position, a movable part on the runner for operating said locking means, a catch on the runner for locking said movable part thereon, and means carried by the stick for releasing the catch.

2. In an umbrella, a stick, sectional ribs connected to the stick, the rib sections being telescopically connected, a runner mounted on the stick, stretchers for the ribs connected to the runner and to one of the rib sections, holding means carried by one of the rib sections for locking the rib sections in extended position, unlocking means for said holding means carried by the stretchers, actuating means for the unlocking means carried by the runner, a catch on the runner for locking the actuating means thereon,

and means carried by the stick for releasing the catch.

3. In an umbrella, a stick, sectional ribs connected to the stick, the rib sections being telescopically connected, a runner mounted on the stick, stretchers for the ribs connected to the runner and to one of the rib sections, holding means carried by one of the rib sections for locking the rib sections in extended position, a sleeve slidably mounted on the runner, a connection between said sleeve and the aforesaid holding means for releasing the latter, a catch on the runner for locking the sleeve thereon, and means carried by the stick for releasing the catch.

4. In an umbrella, a stick, stretchers, a runner mounted on the stick and having a fixed collar to which the stretchers are connected, ribs made in sections, means for locking the rib sections in extended position, sleeves slidably mounted on the runner on opposite sides of the fixed collar, a connection between the sleeves, an operative connection between one of the sleeves and the aforesaid locking means, means for locking the sleeves relative to the runner, and means for releasing the sleeves when the umbrella is folded.

5. In an umbrella, a stick, stretchers, a runner mounted on the stick and having a fixed collar to which the stretchers are connected, ribs made in sections, means for locking the rib sections in extended position, sleeves slidably mounted on the runner on opposite sides of the fixed collar, a connection between the sleeves, a connection between one of the sleeves and the aforesaid locking means, a shoulder on the other sleeve, a catch on the runner adapted to engage the shoulder, and means carried by the stick for releasing the catch.

Signed by me at Chicago, Illinois, this 19th day of October, 1908.

ISAK EKLUND.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."