

No. 835,306

PATENTED NOV. 6, 1906.

G. A. MANGELSDORF.

UMBRELLA.

APPLICATION FILED SEPT. 26, 1905.

2 SHEETS—SHEET 1.

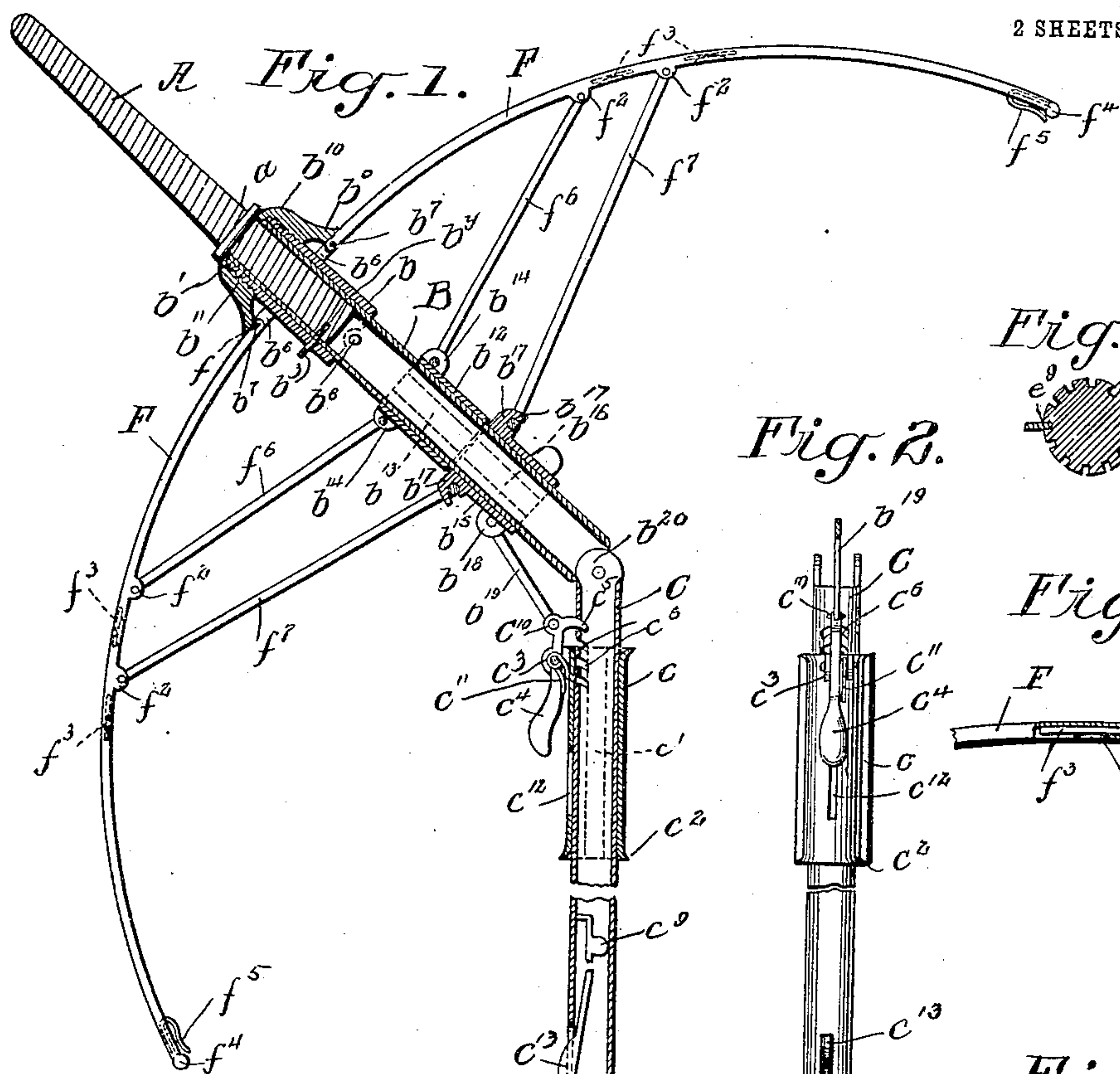


Fig. 2.

Fig. 8.

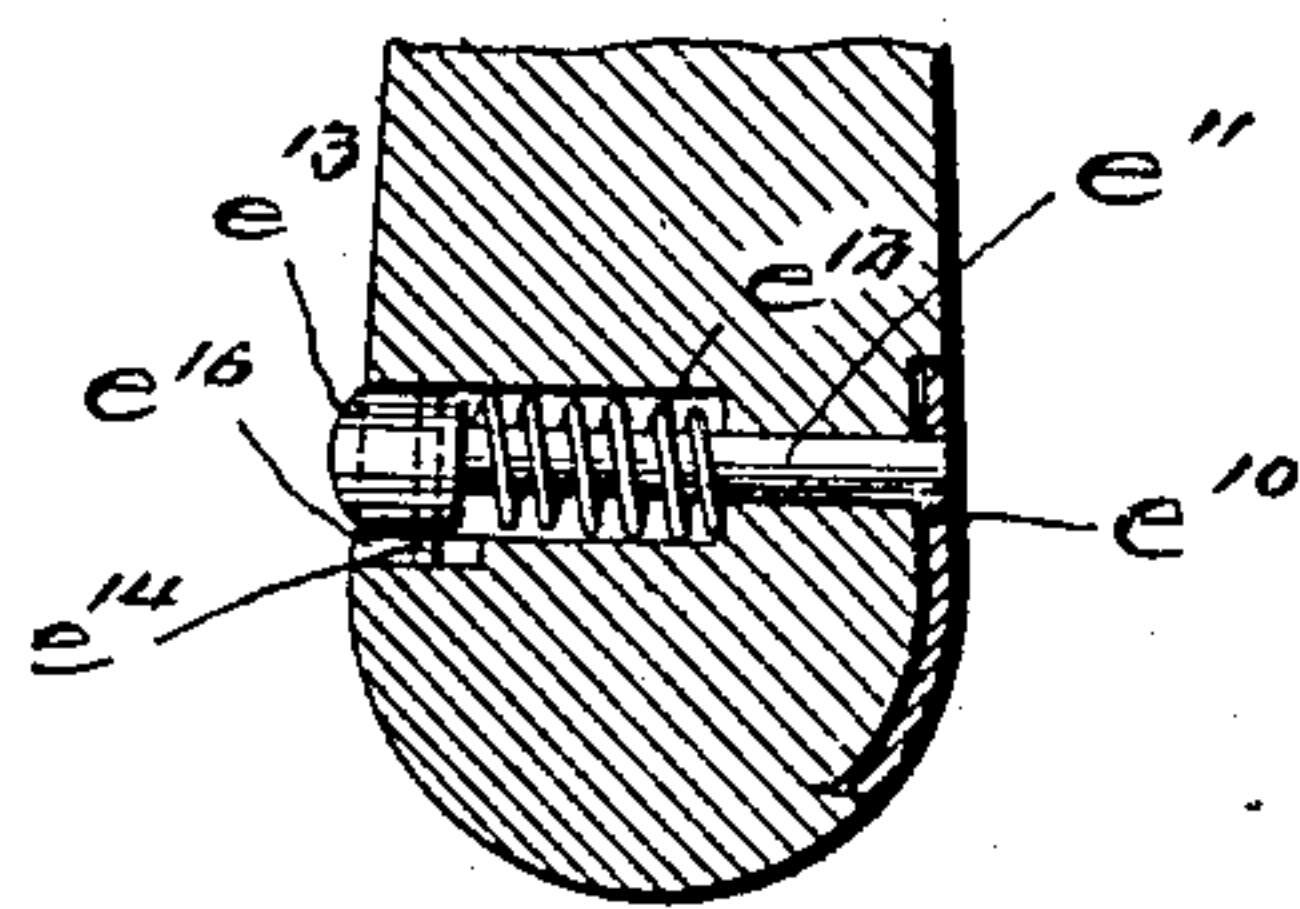
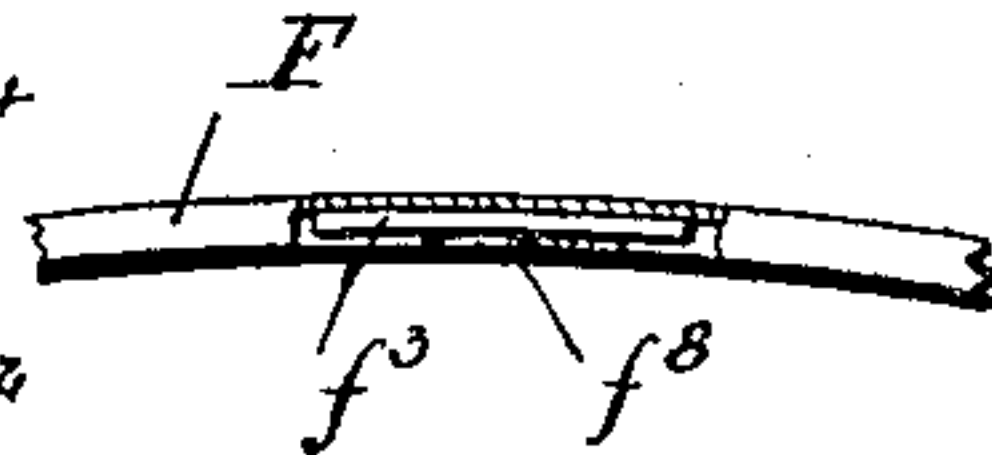
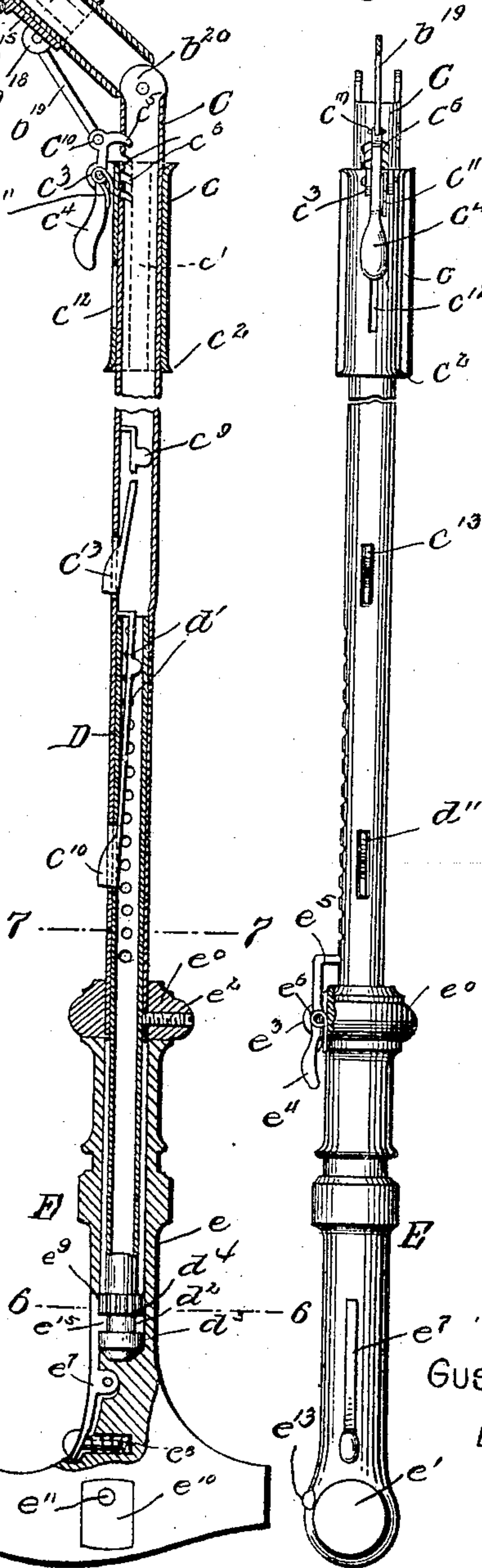
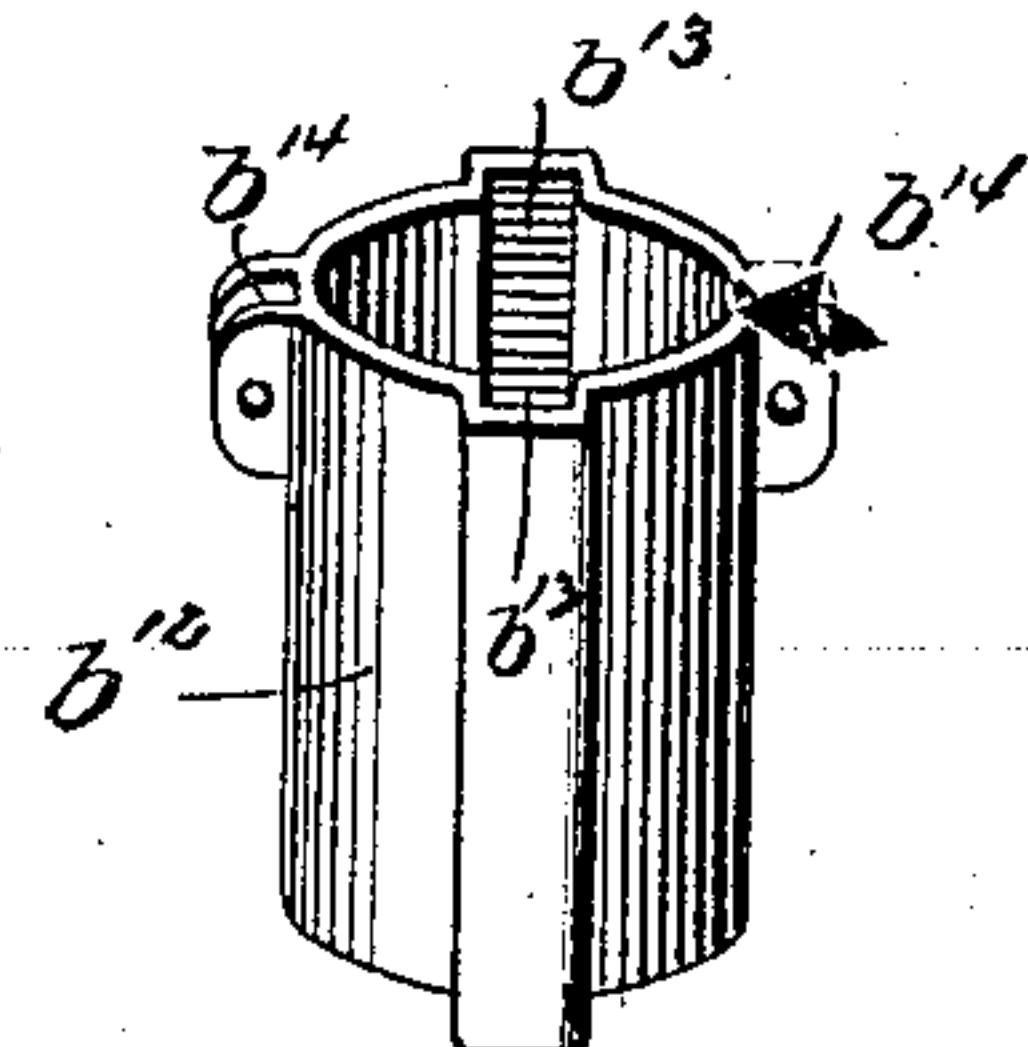


Fig. 5.

Fig. 4.



WITNESSES:

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2 SHEETS—SHEET 2.

Fig. 3.

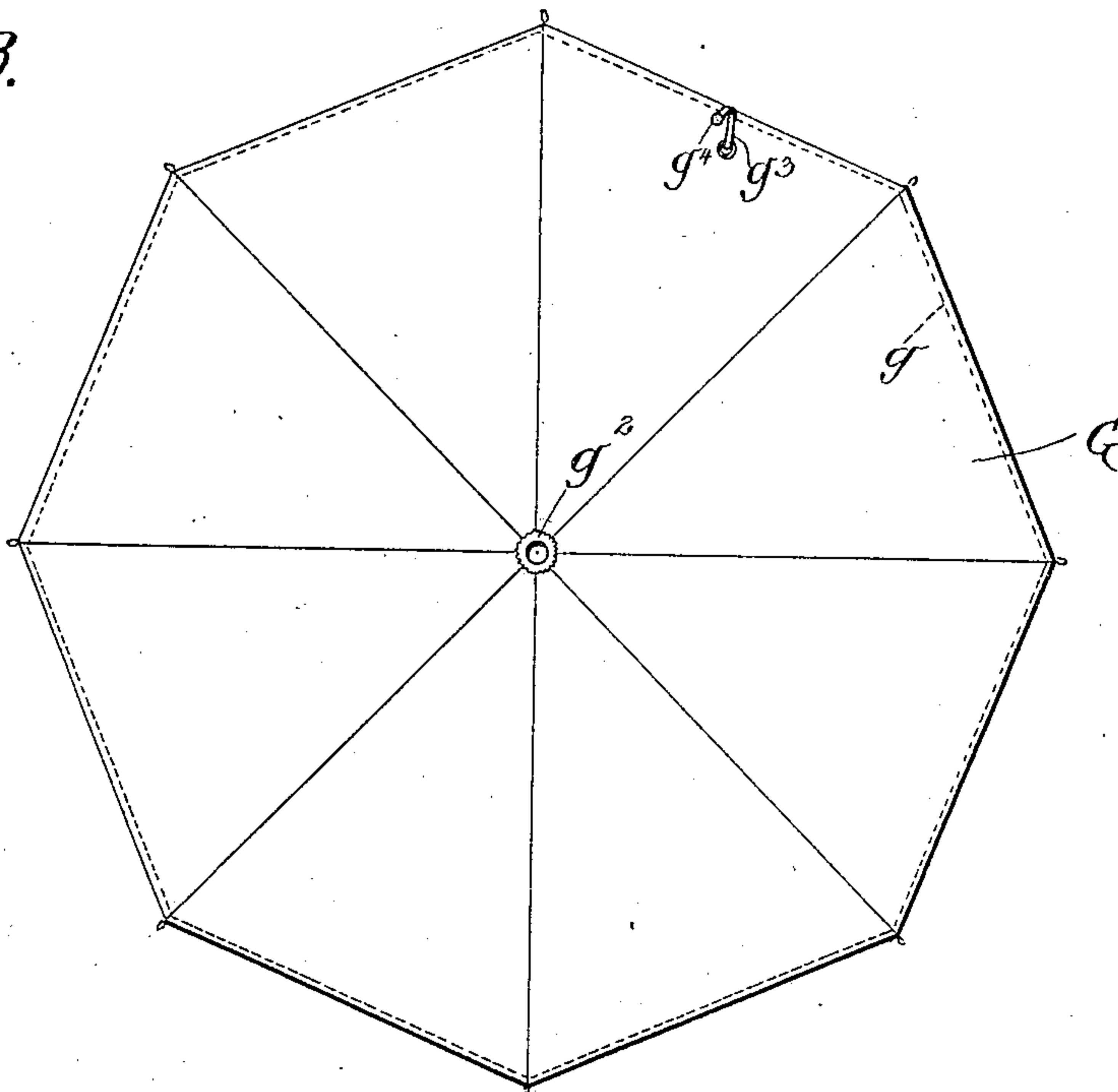


Fig. 9.

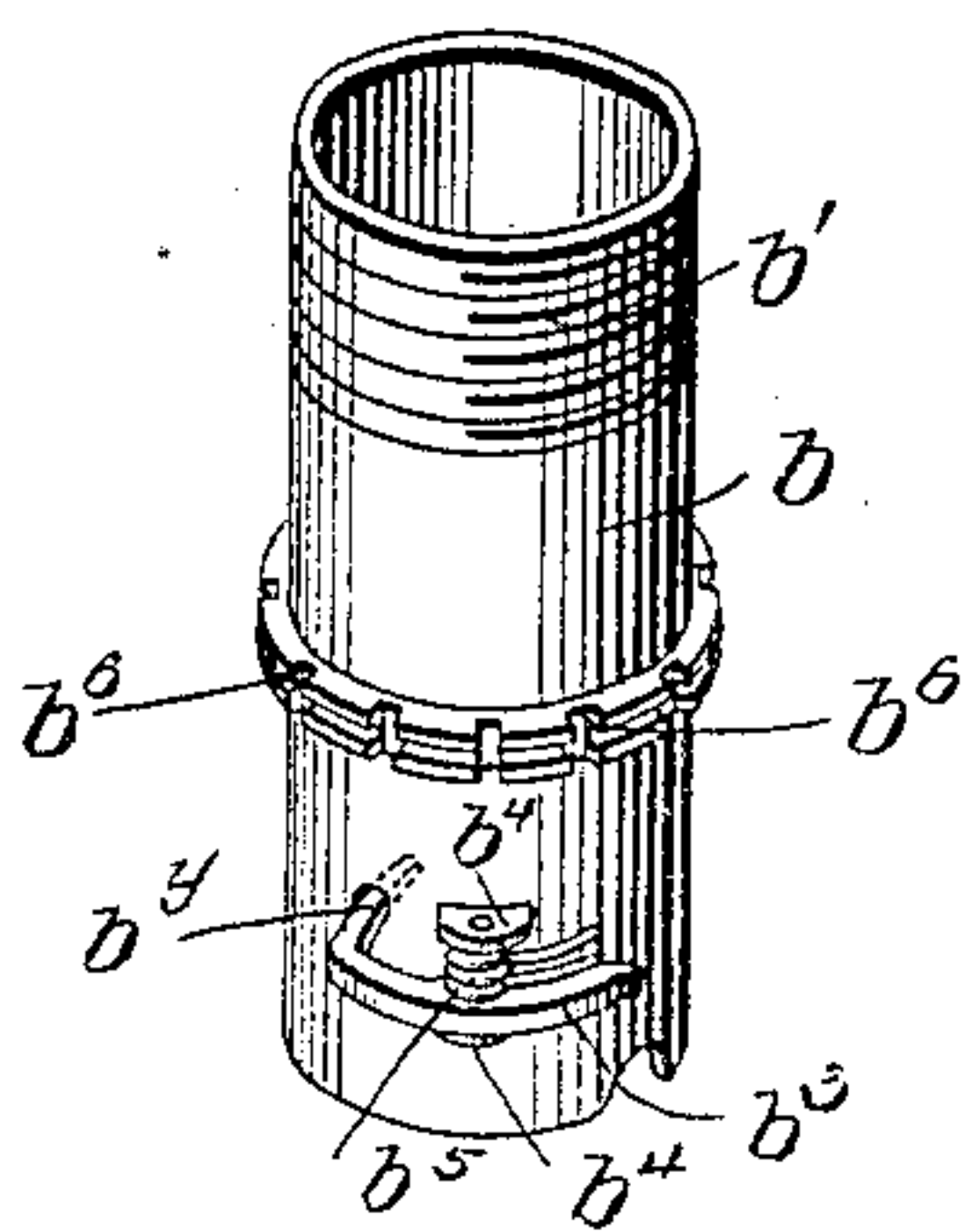


Fig. 10.

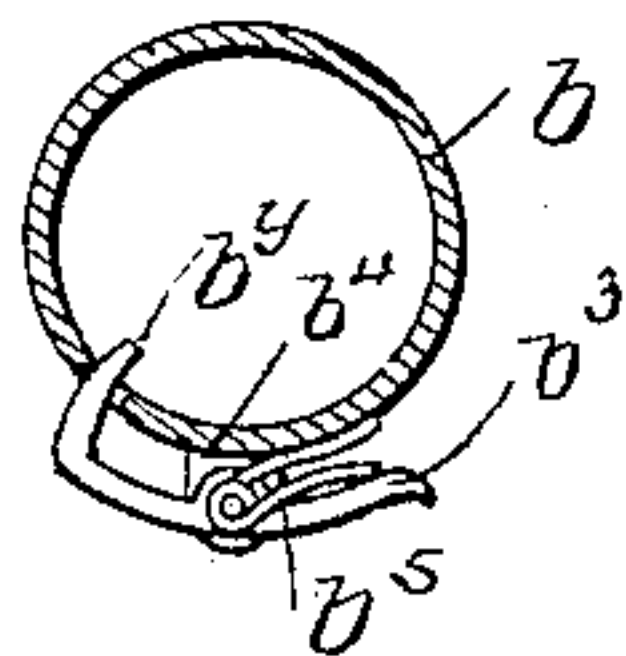


Fig. 11.

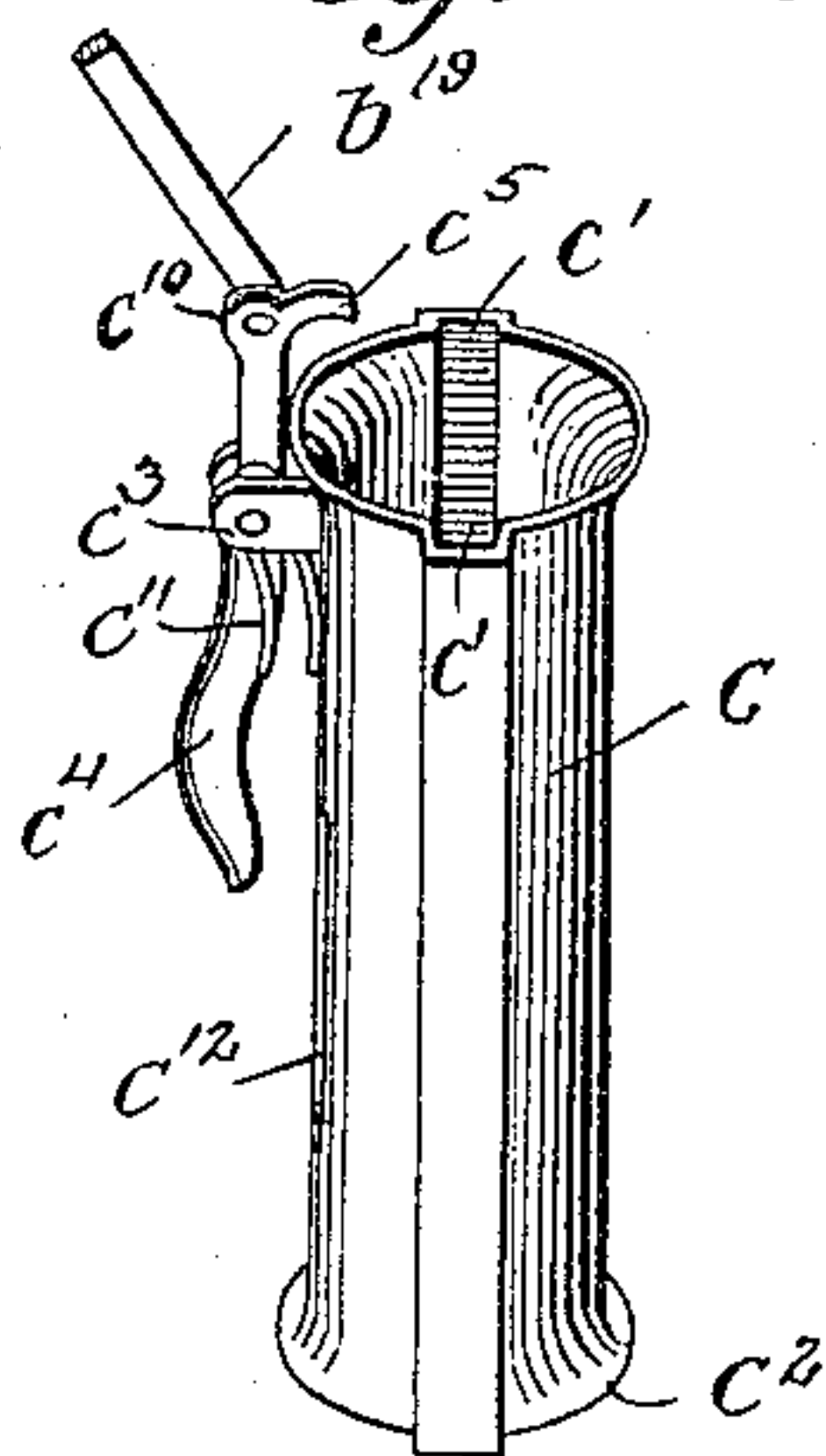
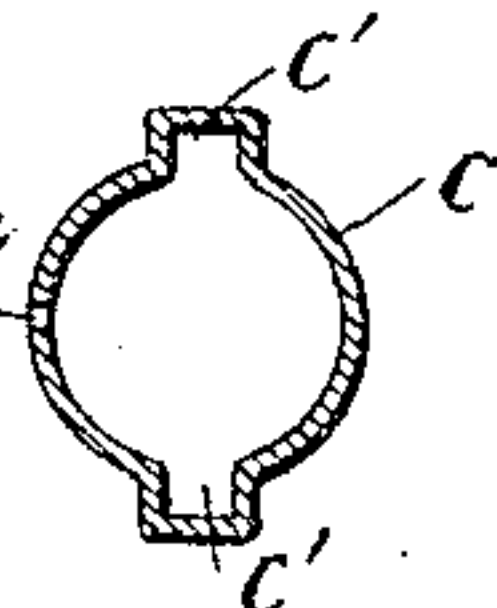


Fig. 12.



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# UNITED STATES PATENT OFFICE.

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## UMBRELLA.

No. 835,306.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed September 26, 1905. Serial No. 280,109.

*To all whom it may concern:*

Be it known that I, GUSTAV A. MANGELSDORF, a citizen of the United States, and a resident of Houston, in the county of Harris and State of Texas, have made certain new and useful Improvements in Umbrellas, of which the following is a specification.

My invention is an improvement in umbrellas; and it consists in certain novel constructions and combinations of parts hereinafter described and claimed.

In the drawings, Figure 1 is a central longitudinal section of my improved umbrella. Fig. 2 is a front elevation of a part of the stick. Fig. 3 is a plan view of the cover. Fig. 4 is a detail perspective view of the sleeve for the attachment of the braces. Fig. 5 is an enlarged transverse section through the handle on the line of the clasp. Fig. 6 is a section on the line 6 6 of Fig. 1. Fig. 7 is a section on the line 7 7 of Fig. 1. Fig. 8 is a detail view of a part of one of the ribs, showing the reinforce. Fig. 9 is a detail perspective view of the sleeve to which the ribs are attached. Fig. 10 is a transverse section there-through on the line of the catch. Fig. 11 is a detail perspective view of the sleeve to which the stretchers are attached. Fig. 12 is a transverse section of the same.

In the practical application of my invention I provide a stick composed of five sections—a solid tip A, a tubular end B, hinged to one of the telescoping sections C and D, and the handle proper E.

The tip A is solid, and about an inch and a half from the lower end thereof is arranged a pin  $a$  transversely of the tip and projecting slightly at either side. The tip A is received into the end of the tubular part B, the pin  $a$  engaging the edges of the tube to limit the motion of the tip therein. A sleeve  $b$  is arranged upon the outer end of the section B<sup>3</sup>, the said sleeve being provided at its upper end with screw-threads  $b'$  for engagement by the screw-threads  $b^{11}$  of the cap  $b^{10}$ , the cap being provided with an opening in its top of a sufficient diameter to allow the passage of the solid tip, but not that of the projecting ends of the pin  $a$ , and the lower edge of the cap is provided with an outwardly-projecting flange  $b^o$ . The lower end of the sleeve is notched at diametrically opposite points, forming seats for receiving a pin  $b^8$ , traversing the section B and projecting therefrom on either side.

The sleeve  $b$  is provided with lugs  $b^4$ , in which is pivoted a lever  $b^3$ , provided with a catch  $b^v$  for engaging registering openings in the sleeve, the section B and the tip A thus securing the parts in position with respect to each other. The lever  $b^3$  is curved to conform to the curvature of the sleeve and is normally retained in its engaging position by means of the spring  $b^5$ . Below the cap  $b^{10}$  the sleeve is provided with a series of circumferentially-alined sockets  $b^6$  for the reception of the ends of the ribs F, the ribs being secured in the sockets by means of the wire  $b^7$ , traversing openings in the ends of the ribs in the usual and well-known manner.

A sliding sleeve  $b^{12}$ , provided with oppositely-disposed grooves  $b^{13}$  for receiving the projecting ends of the pin  $b^8$  and allowing the passage of the sleeve thereover, is arranged upon the section B, the sleeve being provided at its upper end with oppositely-projecting pairs of lugs  $b^{14}$ , in which are pivoted the inner ends of braces to be hereinafter described. A second sliding sleeve  $b^{15}$ , provided with oppositely-arranged grooves  $b^{16}$ , similar to the grooves  $b^{13}$  and for a like purpose, is arranged below the first sleeve upon the section B, the upper end of the sleeve being provided with a series of circumferentially-alined sockets  $b^{17}$  for receiving the inner ends of the stretchers  $f^7$  and at its lower end with a pair of lugs  $b^{18}$ , in which is pivoted the upper end of a connecting-rod  $b^{19}$ , for a purpose to be hereinafter described. The lower end of the section B is secured to the upper end of the outer section C of the telescoping tube by a hinged joint  $b^{20}$ .

Upon the outer section C of the telescoping tubes is a runner  $c$ , having therein oppositely-arranged grooves  $c'$ , similar to the grooves  $b^{13}$  and for a like purpose, and the lower end of the said runner is flared outwardly, as at  $c^2$ , for a purpose to be hereinafter described. A pair of lugs  $c^3$  are arranged upon the upper end of the runner and in the lugs is pivoted a lever  $c^4$ , having upon the end thereof a catch  $c^5$ , for engaging a longitudinal series of openings  $c^6$  in the section C, and the upper end of the lever is provided with a pair of lugs  $c^{10}$ , in which is pivoted the lower end of the connecting-rod  $b^{19}$ , the catch  $c^5$  being normally maintained in its engaging position by means of a spring  $c^{11}$ . The runner  $c$  is provided with an opening  $c^{12}$  for receiving a catch  $c^{13}$  upon a spring  $c^9$ ,



arranged within the interior of the tube, and below the spring  $c^9$  is arranged a second and similar spring  $c^8$ , also provided with a catch projecting through an opening in the tube, the catches being adapted to engage the opening in the runner for securing the umbrella in its closed position, the above construction of spring-catch being the ordinary method of constructing such parts. The flaring end  $c^2$  of the runner  $c$  provides an incline or cam for gradually forcing the springs in when the runner passes thereover.

The inner tube-section D is provided with longitudinal grooves  $d^0$   $d$ , the grooves being arranged at a distance of ninety degrees from each other, and the said grooves are engaged by ridges  $c^7$   $c^8$ , similarly arranged upon the inner surface of the outer tube-section C. This arrangement prevents rotary movement of the sections with respect to each other. The inner section D is provided at its upper end with a longitudinal series of perforations  $d'$  and at its lower end with a circumferential groove  $d^2$ , forming a shoulder  $d^3$  at the extreme end of the section, that part of the section immediately above the groove being notched, as at  $d^4$ , for a purpose to be hereinafter described.

The lower end of the inner section D is received within a longitudinal opening in the body portion  $e$  of the handle proper, E, the said handle being also provided with an angular grasping portion  $e'$ . A collar  $e^0$  is attached to the lower end of the outer sleeve by means of a screw  $e^2$ , the collar being provided with a pair of lugs  $e^3$ , in which is pivoted a lever  $e^4$ , provided with a catch  $e^5$  for engaging the longitudinal series of perforations  $d'$  in the section D, the said catch being maintained normally in its engaging position by means of a spring  $e^6$ . A lever  $e^7$  is pivoted to the body portion of the handle near its junction with the angular portion, the lever being provided with a lug  $e^{15}$  for engaging the circumferential groove  $d^2$ , and with a catch  $e^9$  for engaging the notches  $d^4$  of the inner section, the lever being normally retained in its engaging position by means of a spring  $e^8$ .

Arranged within an opening in the side of the angular portion of the handle is a plate  $e^{10}$ , the plate being secured to the end of the pin  $e^{11}$ , traversing the angular portion of the handle and provided on its opposite end with a button  $e^{13}$ . A pin  $e^{14}$ , secured to the button, engages a groove  $e^{16}$  in the handle for preventing rotary movement of the pin with respect thereto, and a spring  $e^{12}$  normally maintains the plate in its inward position.

Ribs F are attached by one end to the sockets  $b^0$  on the sleeve  $b$  by means of a wire  $b^7$ , traversing the perforations  $f$  in the ends of the rib, the free ends of the wire being twisted in the ordinary manner to secure the parts in their proper position. Lugs  $f^2$  are provided upon the under side of a pair of dia-

metrically opposite ribs for receiving the outer end of a brace  $f^6$ , the inner end of the brace being pivoted in the lugs  $b^{14}$  of the sliding sleeve  $b^{12}$ . The above-described braces are for the purpose of guiding the sliding sleeve in proper relation to the pin  $b^8$  in the tubular end B. Each of the ribs is provided on its under surface at approximately the center thereof with a pair of lugs  $f^2$ , in which is pivoted the outer end of the stretchers  $f^7$ , the inner end of the stretchers being pivoted in the lugs  $b^{17}$  of the sliding sleeve  $b^{15}$ . The ribs F are tubular in form, and for the purpose of strengthening the rib at its weakest point—that is, at the attachment of the stretchers—I insert a reinforce  $f^3$ , comprising a steel bar circular in cross-section inserted within the bore of the tube and held in place by fluting the rib, as at  $f^8$ . The free ends of the ribs are provided with the ordinary ball-point  $f^4$ , and at the inner side of the ball and on the lower face of the rib is a hook  $f^5$ , for a purpose to be hereinafter described.

The cover G is of ordinary form and construction, except that the outer edge thereof is provided with a bordure-cord  $g$ , the cord being drawn outwardly into loops at points corresponding to the position of ribs when the cover is in place. These loops are intended to pass over the ball-point and to be engaged by the hooks  $f^5$ . The center of the cover is provided with a rosette  $g^2$ , of leather or cloth, to prevent contact of the cover with the cap  $b^{10}$ , and the cover is provided with the ordinary securing-band  $g^3$  and button  $g^4$ . It will be evident from the description that the cover may be removed from the ribs when it is desired to renew the same or replace it by another cover. This operation is performed by unscrewing the cap, when the metal tip may be removed and the sleeve  $b$ , together with the sliding sleeves and the runner, be removed entirely from the supporting-stick. The cover may be then unhooked from the ribs and replaced by another, after which the parts are returned to their proper position and again secured in place by the cap.

The top of the umbrella may be tilted at an inclination to the body portion of the stick by means of the lever  $c^4$ , pivoted to the runner  $c$ , and when adjusted to the proper angle may be retained in such position by the engagement of the catch with the perforation. The supporting-stick may be also lengthened by sliding the inner section in or out of the outer section, the parts being retained in their adjusted position by means of the catch  $e^5$  on the collar.

When the upper end of the umbrella is set at an incline to the main portion of the stick, the handle may be rotated to bring it into convenient grasping position without changing the position of the inclined portion of the umbrella, this being permitted by the spring-



catch  $e^9$ . By means of the plate  $e^{10}$  the umbrella may be attached to part of the clothing, as the belt or coat, when it is desired to have the free use of the hands.

5 By providing my improved umbrella with an extensible handle the same may be reduced in longitudinal extent when packing the same for traveling, and should such contraction not be sufficient the handle portion  
10 may be detached.

While I have described my improved umbrella as an umbrella, it is evident that the same construction may be made use of in a parasol or sunshade with equal facility, and  
15 by providing a smaller frame the stick portion might be used interchangeably with a large or small sized frame, thus providing a parasol and an umbrella for use on the same stick.

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

1. An umbrella comprising a stick composed of a plurality of telescoping sections,  
25 means for fixing the sections with respect to each other, comprising a collar secured to the outer section, a lever pivoted to the collar and provided with a catch for engaging in a longitudinal series of perforations in the inner  
30 section, a spring for normally maintaining the catch in engaging position, a handle portion rotatably connected with the inner section, means for fixing the handle portion with respect to the inner section, comprising  
35 a lever pivoted to the handle portion and provided with a catch for engaging a circumferential series of notches on the inner section, a tubular end portion hinged to the outer section, a tip seated in the tubular end portion,  
40 a pin traversing the tip and engaging the end of the tubular end portion, a sleeve having a screw-threaded upper end encircling the end portion, an internally-screw-threaded cap engaging the sleeve, ribs hinged to the sleeve,  
45 a sleeve on the tubular end portion near the attached end thereof, stretchers connecting the sleeve with the individual ribs, a sleeve intermediate the last-named sleeves, braces connecting said sleeves with oppositely-disposed  
50 ribs, hooks on the free ends of the ribs, a cover on the ribs and engaged by the hooks, and means for fixing the tubular end portion with respect to the outer section, comprising a runner on the outer section, a lever pivoted  
55 to the runner and engaging a longitudinal series of perforations in the outer section, a spring for normally maintaining the catch in engaging position, and a connection between the lever and the sleeve near the attached  
60 end of the tubular end portion.

2. An umbrella comprising a stick composed of a plurality of telescoping sections, means for fixing the sections with respect to each other, a handle portion rotatably connected  
65 with the inner section, means for fixing the handle portion with respect to the inner section, a tubular end portion hinged to the outer section, a tip seated in the tubular end portion, means for securing the tip to the said end portion, and a frame associated with said tubular end portion.

ing the handle portion with respect to the inner section, a tubular end portion hinged to the outer section, a tip seated in the tubular end portion, a sleeve on the outer end of the tubular end portion, means for securing the  
70 tip and the sleeve to the tubular end portion, ribs hinged to the sleeve, a sleeve on the tubular end portion at the attached end thereof, stretchers connecting the sleeve with the individual ribs, a cover on the ribs, and  
75 means for fixing the tubular end portion with respect to the outer section comprising a runner on the outer section, a spring-actuated lever pivoted to the runner and engaging a longitudinal series of perforations in the  
80 outer section, and a connection between the lever and the sleeve.

3. An umbrella comprising a stick composed of a plurality of telescoping sections, means for fixing the sections with respect to  
85 each other, comprising a collar secured to the outer section, a lever pivoted to the collar and provided with a catch for engaging in a longitudinal series of perforations in the inner section, a spring for normally maintaining  
90 the catch in engaging position, a handle portion rotatably connected with the inner section, means for fixing the handle with respect to the inner section, a tubular end portion hinged to the outer section, means for  
95 fixing the tubular end portion with respect to the outer section, a tip seated in the tubular end portion, means for securing the tip to the said end portion, and a frame associated with said stick.  
100

4. An umbrella comprising a stick composed of a plurality of telescoping sections, means for fixing the sections with respect to each other, a handle portion rotatably connected with the inner section, means for fixing  
105 the handle portion with respect to the inner section, comprising a lever pivoted to the handle portion and provided with a catch for engaging a circumferential series of notches on the inner section, a tubular end portion  
110 hinged to the outer section, means for fixing the end portion with respect to the outer section, a tip seated in the tubular end portion, means for securing the tip to the said end portion, and a frame associated with said tubular end portion.  
115

5. An umbrella comprising a stick composed of a plurality of telescoping sections, means for fixing the sections with respect to each other, a handle portion rotatably connected with the inner section, means for fixing  
120 the handle portion to the inner section, a tubular end portion hinged to the outer section, a tip seated in the tubular end portion, means for securing the tip to said end portion, a frame mounted upon the tubular end portion, and means for fixing the tubular end portion with respect to the outer section comprising a runner on the outer section, a lever pivoted to the runner and engaging a  
130



longitudinal series of perforations in the outer section, a spring for normally maintaining the catch in engaging position, and a connection between the frame and the lever.

5 6. An umbrella comprising a stick composed of a plurality of telescoping sections, means for fixing the sections with respect to each other, a handle portion rotatably connected with the inner section, means for fixing  
10 the handle portion with respect to the inner section, a tubular end portion hinged to the outer section, means for fixing the end portion with respect to the outer section, a tip seated in the tubular end portion, means  
15 for securing the tip to the said end portion, and a frame mounted upon the tubular end portion.

7. An umbrella comprising a stick composed of a plurality of telescoping sections,  
20 means for fixing the sections with respect to each other, a handle portion connected with the inner section, an end portion hinged to the outer section, means for fixing the end portion with respect to the outer section, and  
25 a frame associated with said end portion.

8. An umbrella comprising a stick, a tubular end portion hinged to the stick, a tip seated in the tubular end portion, a pin traversing the tip and engaging the end of the end  
30 portion, a sleeve having a screw-threaded upper end encircling the end portion, an internally-screw-threaded cap engaging the sleeve, and a frame associated with the tubular end portion.

35 9. An umbrella comprising a stick having a tubular end portion, a tip seated in the said end portion, a sleeve detachably connected to the upper end of said end portion, a cap engaging the tip and threaded on the sleeve

for securing the tip to the end portion, ribs 40 hinged to the sleeve, a sleeve on the lower end of the end portion, stretchers connecting said sleeve with the individual ribs, and a cover supported by the ribs.

10. An umbrella comprising a stick having 45 a tubular end portion, a tip arranged in the tubular end portion, a sleeve detachably connected to the end portion, a cap engaging the sleeve and tip for securing said tip to the end portion, ribs hinged to the sleeve, a movable 50 sleeve on said end portion, braces connecting said sleeve with the rib, a second movable sleeve on said end portion, braces connecting said second sleeve with a pair of oppositely-arranged ribs and a cover supported by the 55 ribs.

11. An umbrella comprising a stick having a tubular end portion, a tip seated in the tubular end portion, a sleeve encircling the end portion adjacent to the tip, a lever pivoted 60 on the sleeve, and provided with a catch for engaging registering openings in the sleeve, the end portion, and the tip, a spring for normally maintaining said catch in its engaging position, and a frame associated with said 65 end portion.

12. An umbrella comprising a stick having a tubular end portion, a tip seated in the tubular end portion, a sleeve encircling the tubular end portion adjacent to the tip, means 70 for detachably securing the sleeve and the tip to the tubular end portion and a frame associated with said end portion.

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Witnesses:

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