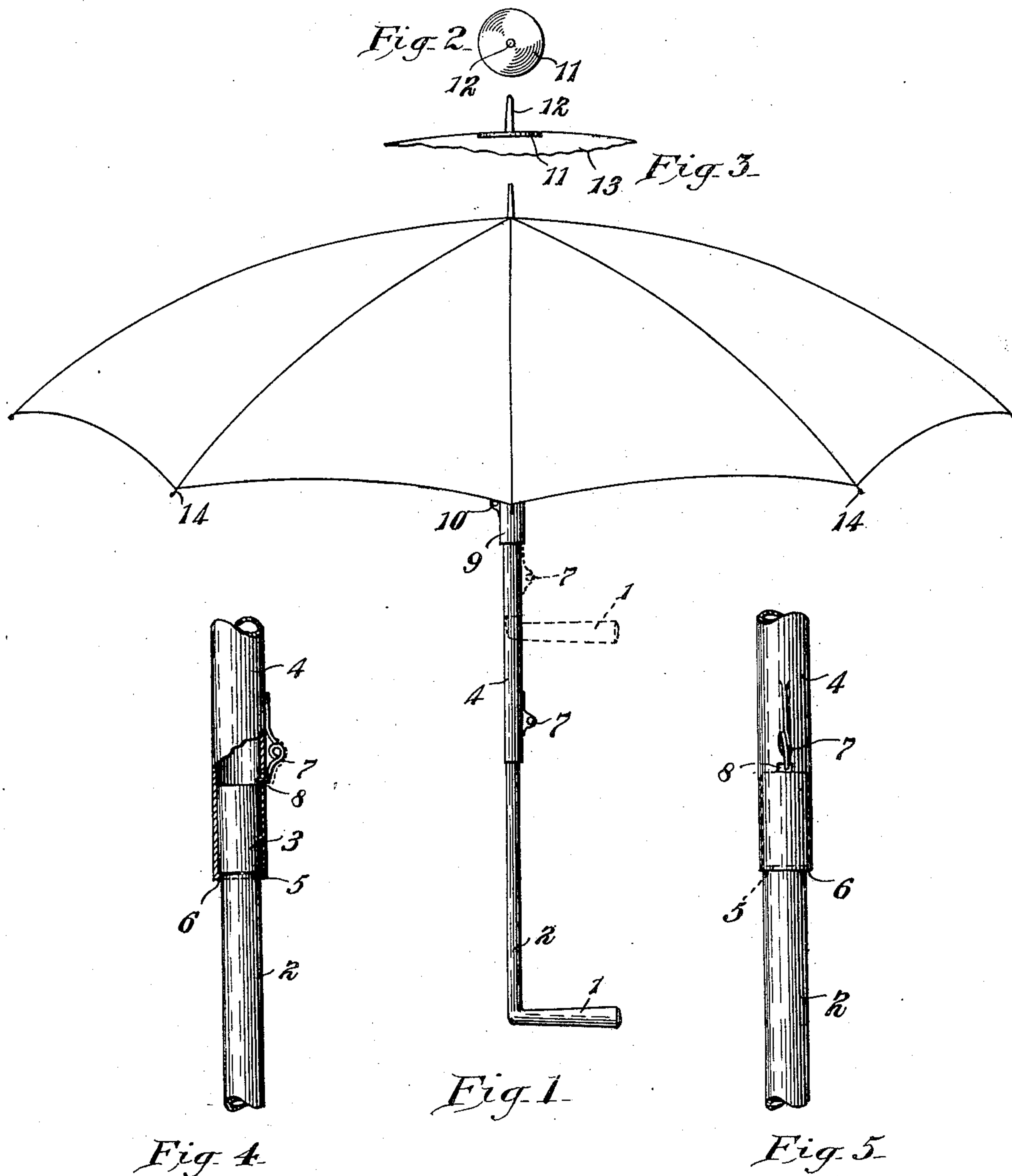


914,662.

E. A. LOOMIS.
 UMBRELLA.
 APPLICATION FILED SEPT. 3, 1908.

Patented Mar. 9, 1909.
 2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

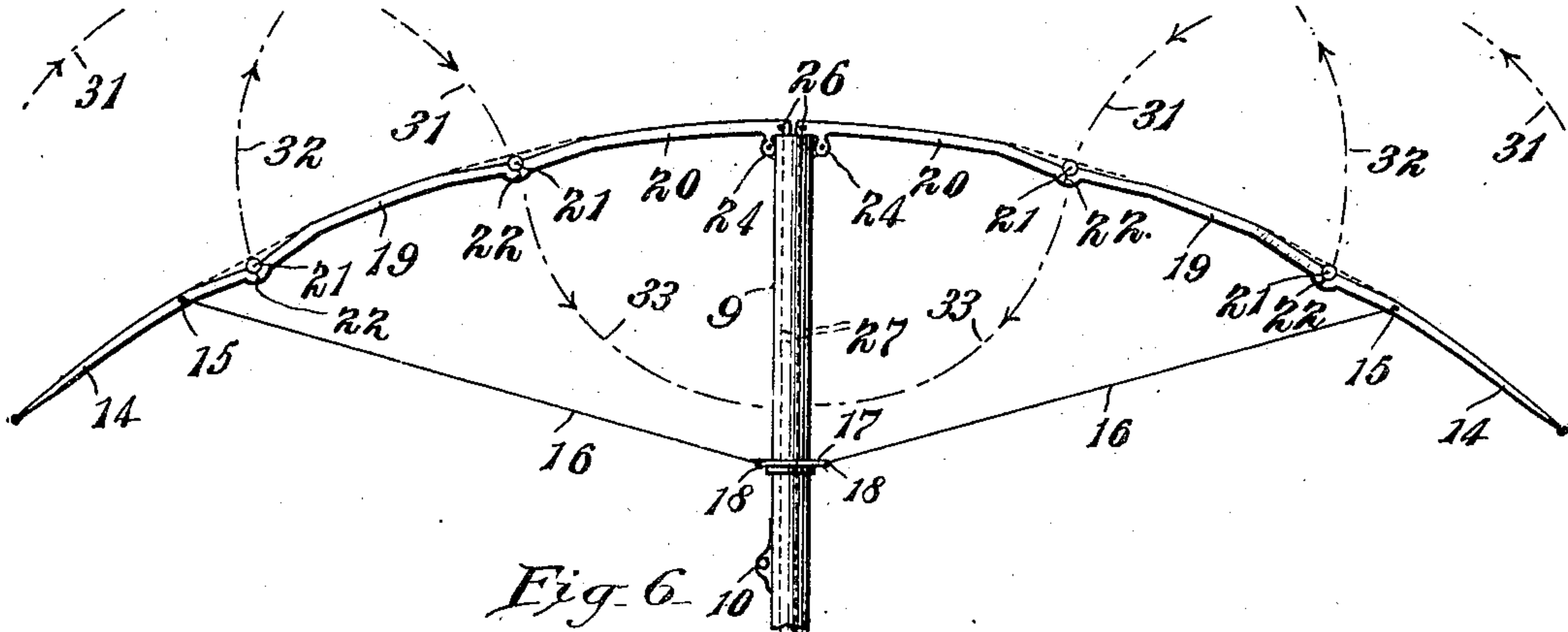


Fig. 6

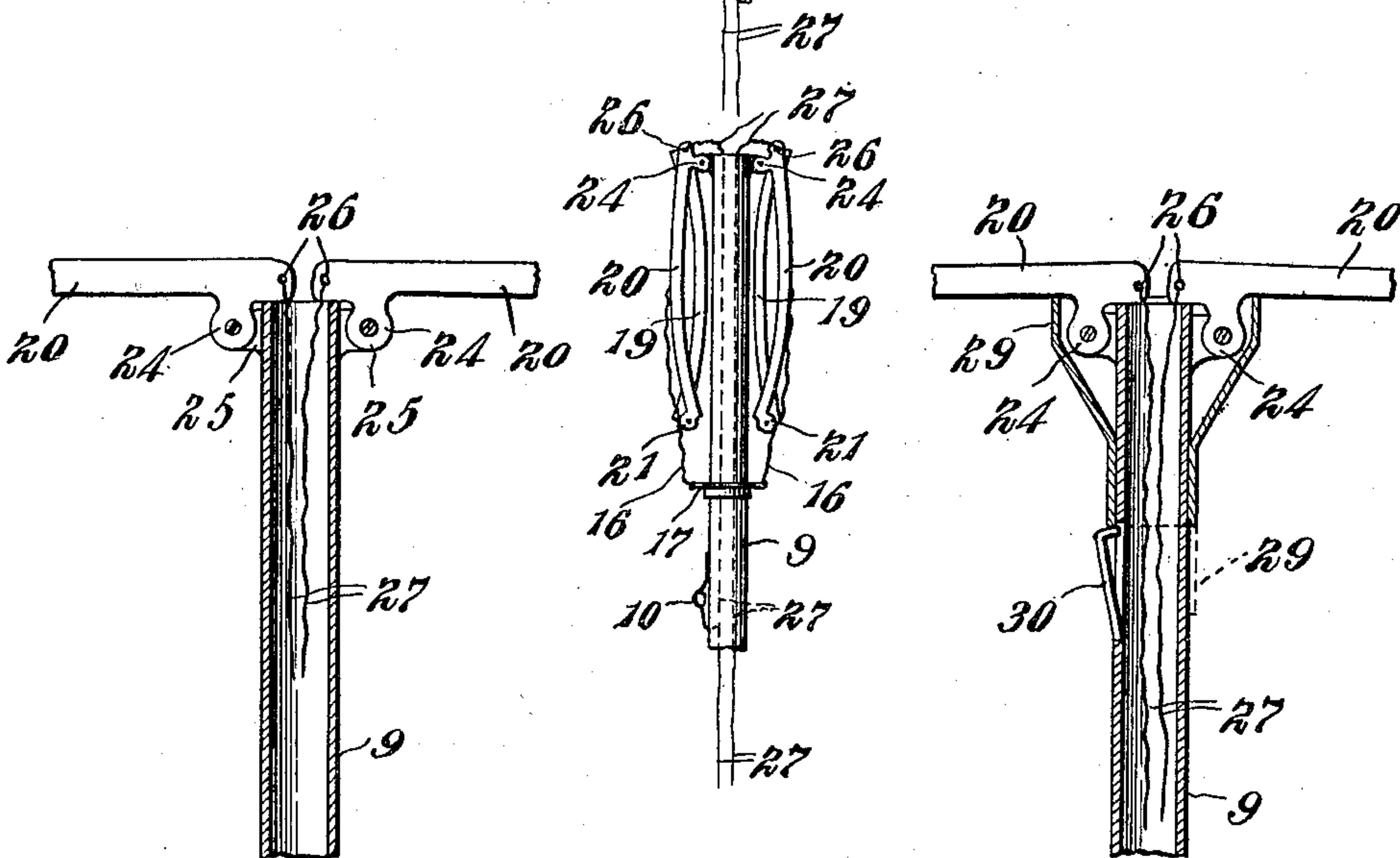


Fig. 7

Fig. 8

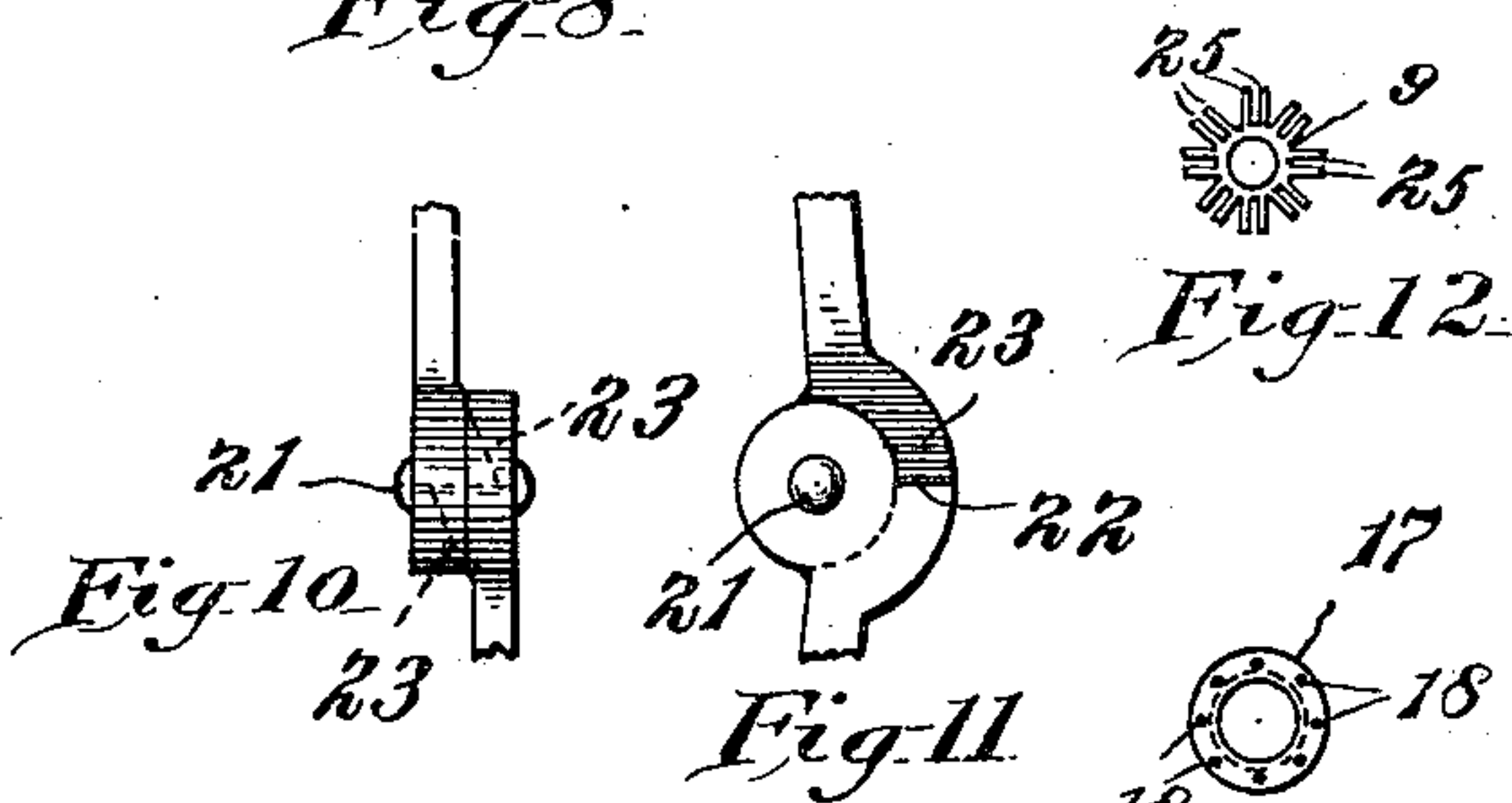


Fig. 10

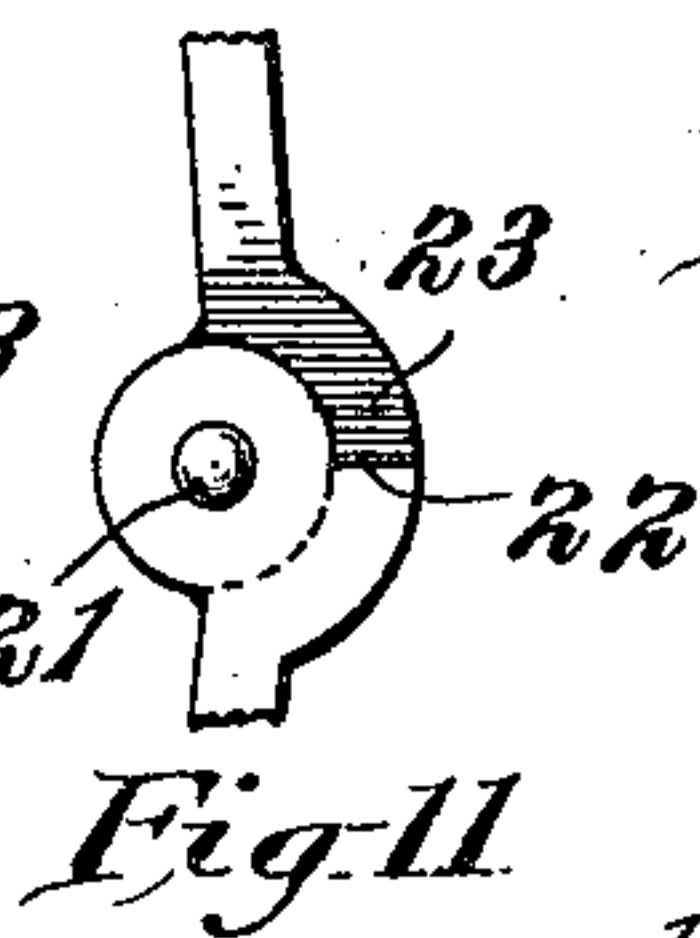


Fig. 11



Fig. 12

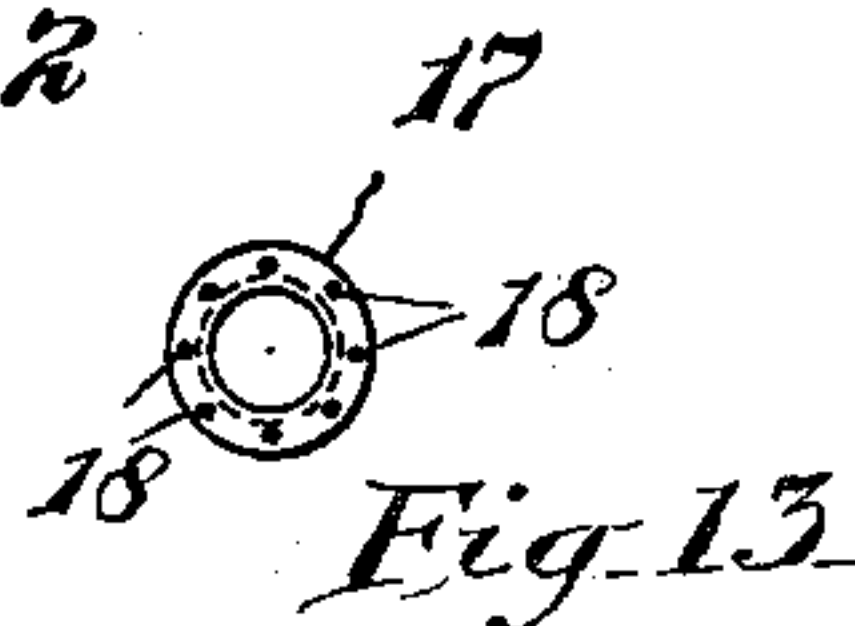


Fig. 13

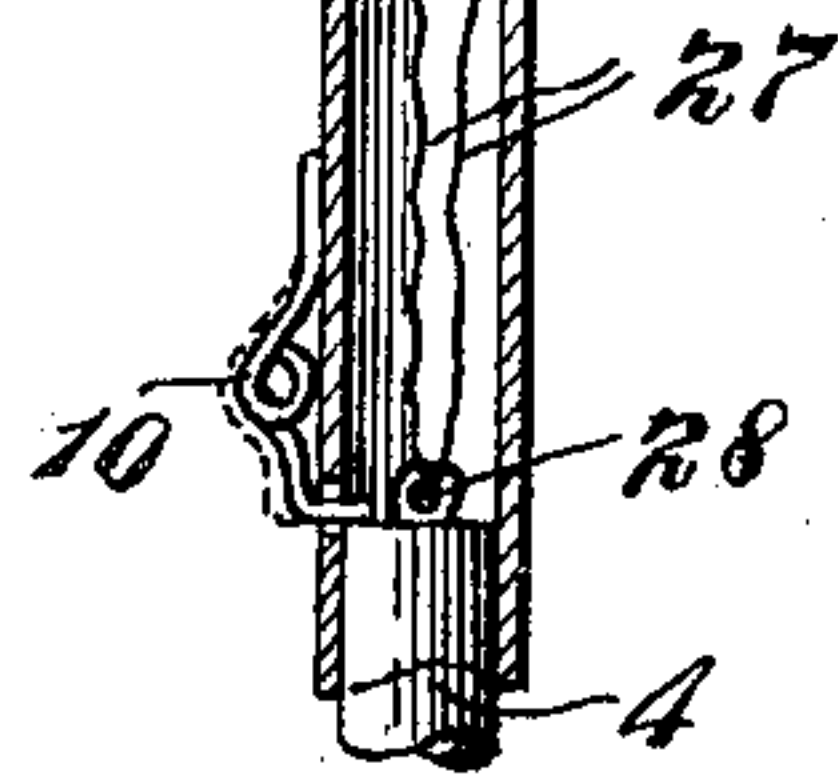


Fig. 9

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UNITED STATES PATENT OFFICE.

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UMBRELLA.

No. 914,662.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed September 3, 1908. Serial No. 451,527.

To all whom it may concern:

Be it known that I, ELLSWORTH A. LOOMIS, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Umbrellas, of which the following is a specification.

My invention relates to improvements in umbrellas and more particularly to the folding or collapsible type.

The object of my invention is to provide an umbrella which will be simple and inexpensive in construction and convenient and reliable in use.

A further object of my invention is to provide automatic means for opening the umbrella when the collapsible rod or staff thereof is drawn into its extended position. And a further object is to provide ribs of a suitable curved form, and means for folding the same into a compact form.

Further objects will appear hereinafter.

With these objects in view, my invention consists in a collapsible umbrella staff comprising tubular telescopic members provided with stops or shoulders to prevent their separation, a series of curved ribs connected by off-set joints pivoted to said staff, connecting means between the inner ribs and the staff for opening the umbrella, and a plurality of cords interposed between the staff and the outer ribs for maintaining the latter in uniform position.

My invention further consists in certain details of construction and arrangements of parts all as will be hereinafter fully described and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a perspective view of my improved umbrella in its preferred form, Figs. 2 and 3 are detail views of the cover protecting plate or button, Figs. 4 and 5 are detail elevations of the umbrella staff, Fig. 6 is a view showing but two of the eight sets of ribs and the manner of folding the same, Fig. 7 is a view showing the ribs in their folded position, Fig. 8 is a vertical section of the staff showing the pivotal connection of the ribs, Fig. 9 is a view similar to Fig. 8 showing a modification, Figs. 10 and 11 are detail views of a rib joint, Fig. 12 is a top elevation of the staff showing the rib

receiving lugs, and Fig. 13 is a detail view of a collar showing the cord receiving eyes.

Referring now to the drawings, 1 indicates the umbrella handle which is integral with the lower tubular member 2 of the staff. A somewhat enlarged portion 3 of the member 2 is telescopically mounted in the member 4 and is provided with a shoulder or stop at 5 adapted to abut an inwardly projecting flange 6 in the member 4, thereby preventing the members 2 and 4 from separating. When the staff is drawn into the extended position, the stop at 5 in the member 2 abuts the flange 6, and a spring 7 projecting through the aperture 8 automatically locks the member 2 in position. The spring 7 is preferably soldered to the member 4 and is of such a form that it may be readily grasped by the fingers and moved outwardly, thus unlocking the member 2. The member 9 of the staff is provided with a spring 10 its connection with the member 4 being similar to the connection of the member 4 with the member 2.

It is obvious from the foregoing that the staff may collapse so that the handle 1 will assume the position indicated by dotted lines in Fig. 1.

A button 11 provided with a stem 12 is secured to the fabric of the umbrella cover either by gluing or stitching, the stem piercing the cover, as shown in Fig. 3, and the surface 13 representing the underside of the cover. The button 11 is provided merely as a shield plate for protection to the center of the cover from the mechanism underneath. The outer rib sections 14 of the umbrella frame may be sewed to the cover in the usual manner, and are provided with eyes 15 to receive cords 16 which radiate from a collar 17 rigidly secured to the member 9. The collar 17 shown in detail in Fig. 13 is provided with cord receiving eyes 18. The intermediate rib sections 19 are jointed to the outer rib sections 14 and to the inner rib sections 20 by means of the joints 21 which are provided with stops 22. The joints 21 and the stops 22 are shown in detail in Figs. 10 and 11, the former being off-set and the latter having oblique surfaces 23. It is obvious that the joints 21 are necessarily off-set, else the ribs could not be folded in a compact form when curved as shown. And the curvature of the ribs is of course necessary in order to secure the correct shape in the cover. It will

be noted that the joints 21 are depressed below the plane of the cover, thus permitting the latter to be smooth and free from projections or irregularities of surface.

5 The inner rib sections 20 are provided with lugs 24 which ribs are pivoted between lugs 25 integral with the member 9. Eyes 26 are provided at the inner ends of the ribs 20 to receive cords or small wire ropes 27 which
10 extend to the eye 28 provided in the member 4, and the stop 29 is provided to limit the movement of the ribs 20.

The umbrella is opened by drawing out the members of the staff until each member
15 is automatically locked by the catch springs, the wire ropes 27 being so adjusted that the ribs 20 are moved into their open positions before the member 4 is locked. A sleeve 29 and a spring-catch 30 may be provided, if
20 desired, to be used in case the wire ropes 27 accidentally break. To close the umbrella, the staff members are first unlocked then the rib sections 14 are folded as indicated by
25 broken lines 31, a fold in the direction indicated by lines 32 is then made, and lastly the ribs are folded as indicated by lines 33 when they assume the position as shown in Fig. 7. For clearness the umbrella cover is not shown in Figs. 6, 7, 8 and 9.

30 While I have shown what I deem to be the preferable form of my device, I do not wish to be limited thereto, as there might be many changes made in the details of construction and arrangement of parts without departing from the spirit of my invention.

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

40 1. In an umbrella a staff comprising a plurality of telescopic members in combination with a plurality of ribs pivotally connected to the upper end of said staff, each rib comprising a plurality of sections hingedly
45 connected and the outer sections and the intermediate sections each being adapted to fold outwardly upon the next section in order and a flexible member connecting each rib to the staff at a point below the upper end of said staff, substantially as described.

50 2. In an umbrella a staff comprising upper and lower telescopic members, in combination with a plurality of ribs pivoted intermediate their ends to the upper member of said staff, eyes provided at the inner extremities of said ribs adjacent the pivot

point, and a plurality of cords connecting said eyes and said lower telescopic member, substantially as described.

60 3. In an umbrella a staff comprising upper and lower telescopic members, in combination with a plurality of ribs pivoted intermediate their ends to the upper ends of the upper member of said staff, eyes provided at the inner extremities of said ribs
65 adjacent the pivot point, an eye provided in the lower telescopic member, and a plurality of cords connecting the eyes in the end of said ribs with the eye in said lower telescopic member, substantially as described.

70 4. In an umbrella, a staff formed of a pair of telescoping members, in combination with a plurality of ribs pivoted to said staff at its upper end, a collar on said
75 staff, cords connecting said ribs near their outer ends with said collar, cords connecting the inner ends of the ribs adjacent the pivot point with the lower member of the staff and adapted to raise said ribs as the
80 lower staff member is extended, means for limiting the outward movement of the staff members and means for locking said members in extended position, substantially as described.

85 5. In an umbrella, a staff, in combination with ribs pivoted thereto intermediate their ends, the inner ends of said ribs adjacent the pivot point extending above said staff, a cover and a shield plate secured centrally to
90 the inner face of said cover and interposed between the same and the ends of said ribs, substantially as described.

95 6. In an umbrella, a staff and a plurality of ribs pivotally connected to the upper end thereof, in combination with a cover, said cover being secured to said ribs and a shield plate interposed between said cover and the upper end of said staff and the adjacent
100 ends of said ribs, substantially as described.

7. In an umbrella, a staff, in combination with a plurality of ribs pivoted intermediate their ends to the upper end of said staff, and means engaging the ends of said ribs adjacent the pivot point for operating the same,
105 substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ELLSWORTH A. LOOMIS.

Witnesses:

WM. C. SMITH,
JANET E. HOGAN.