

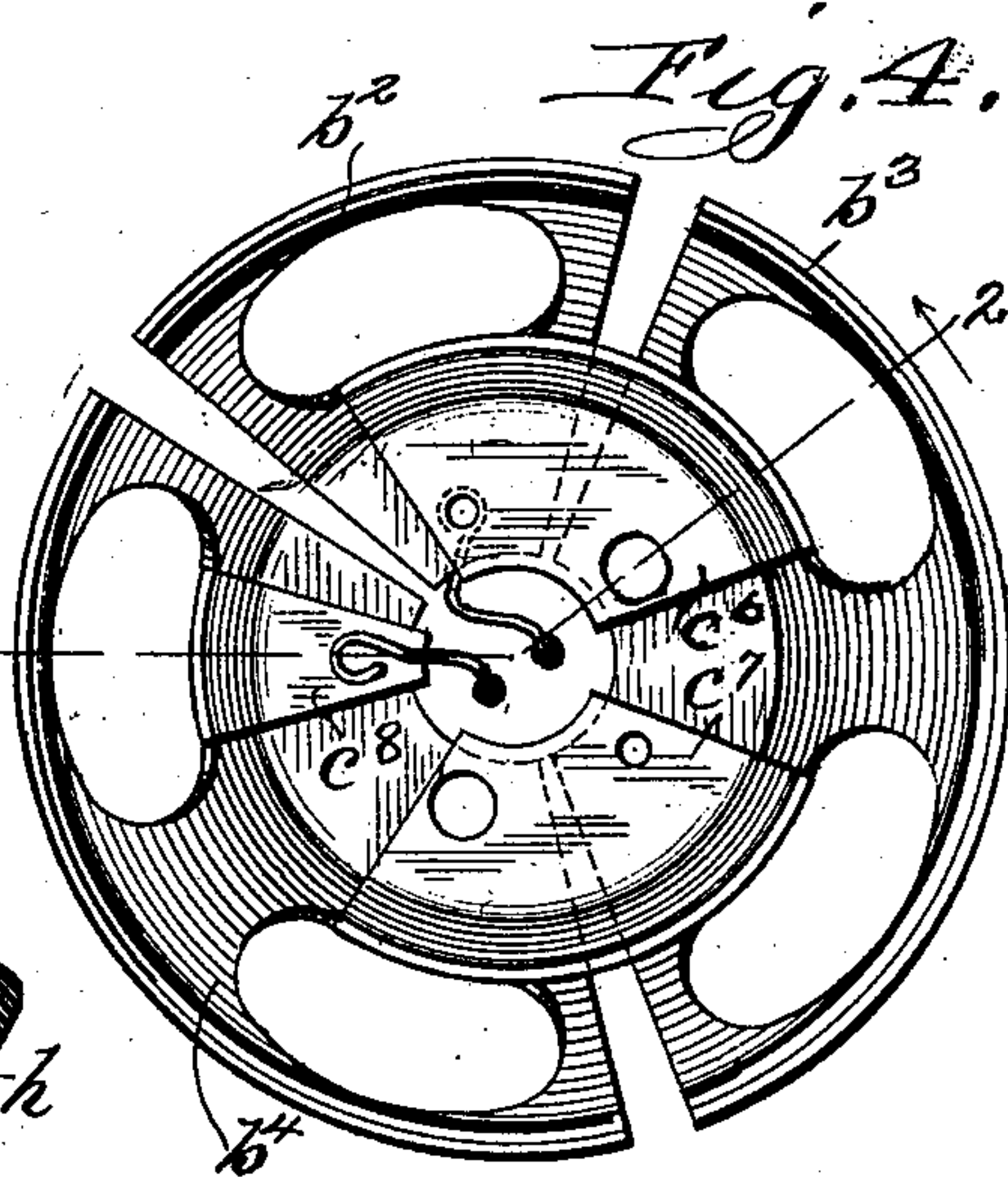
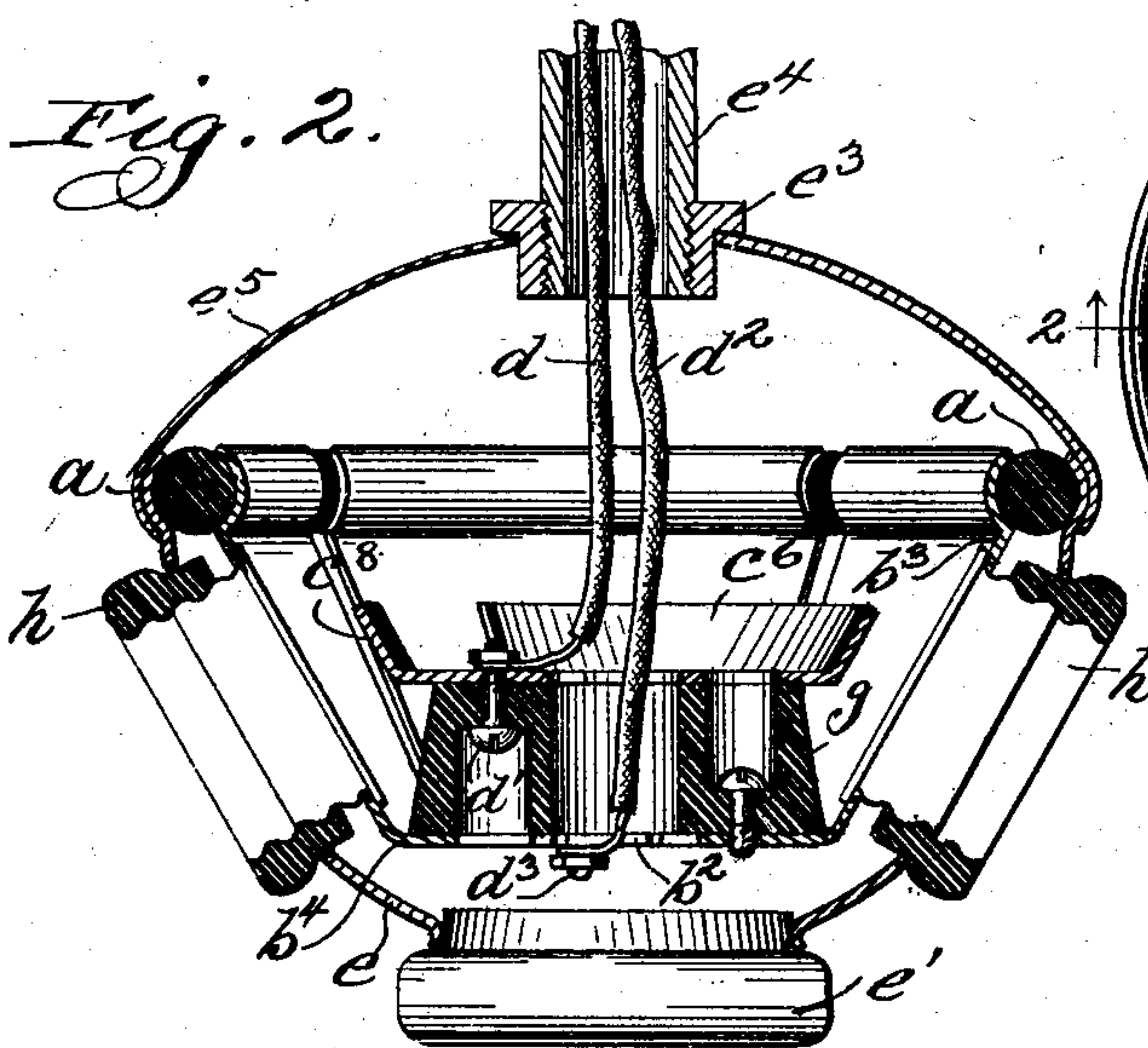
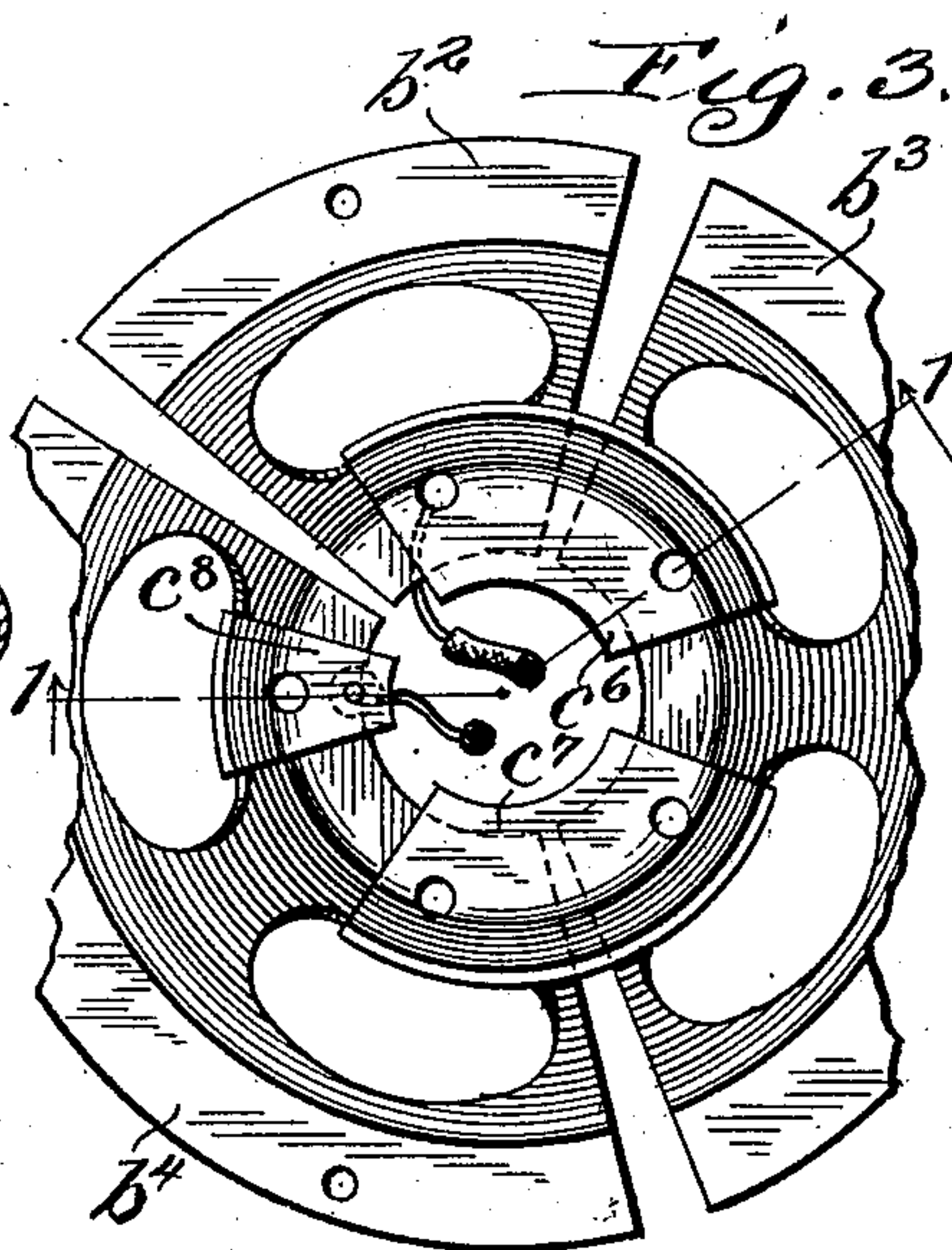
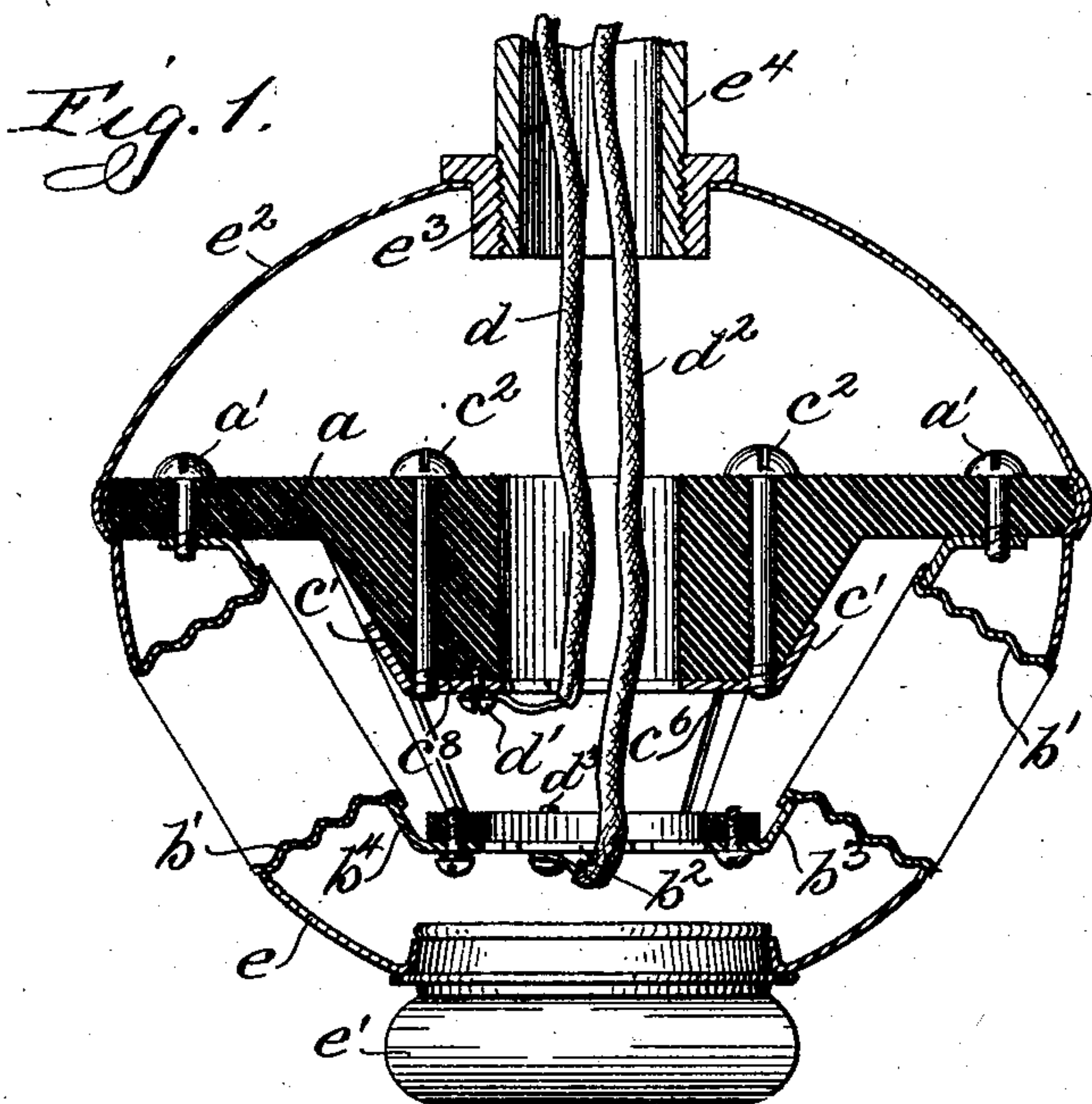
No. 721,775.

PATENTED MAR. 3, 1903.

R. B. BENJAMIN.
PLURAL LAMP SOCKET.
APPLICATION FILED DEC. 9, 1901.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
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Robert Lewis Ames,

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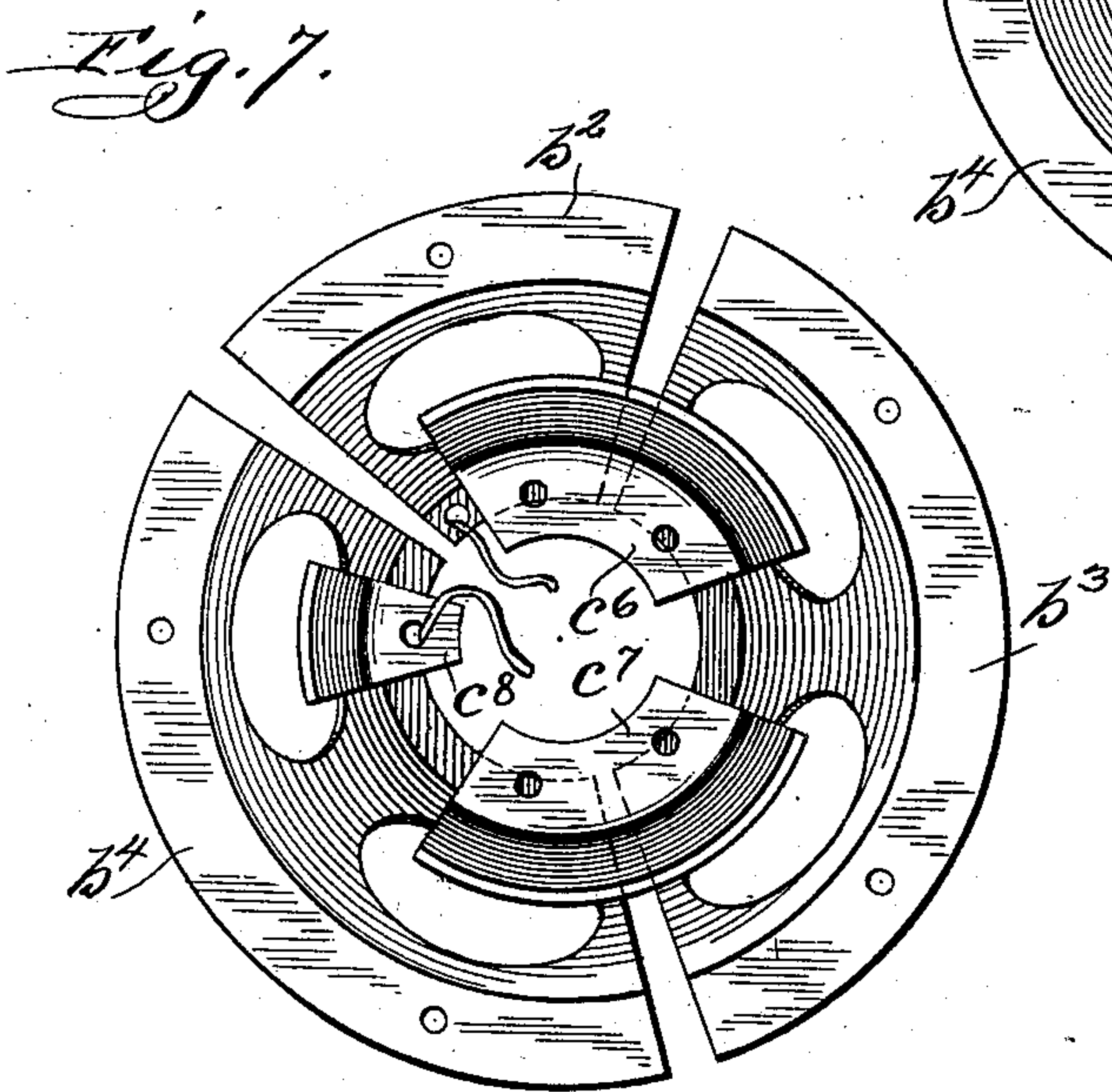
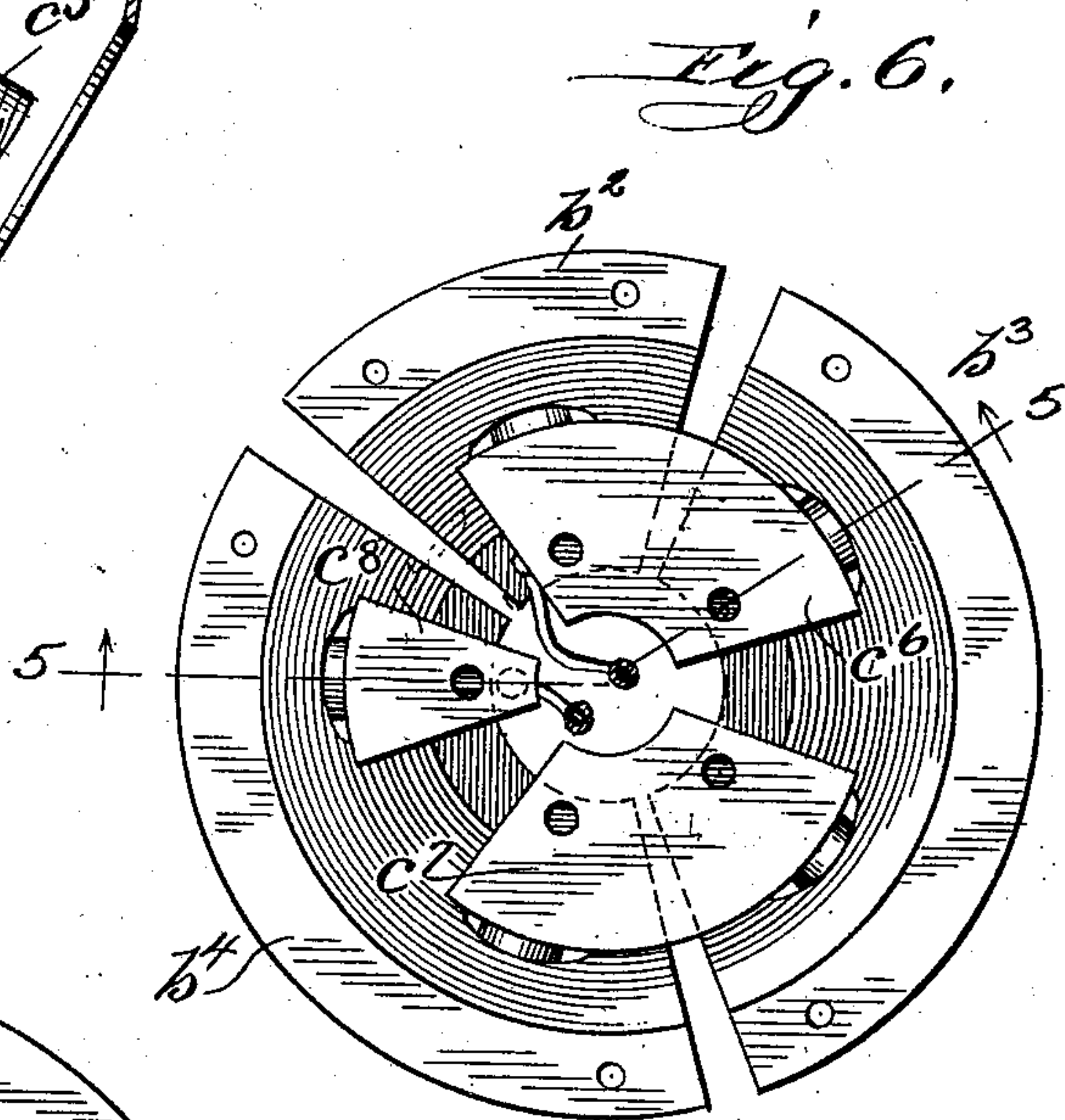
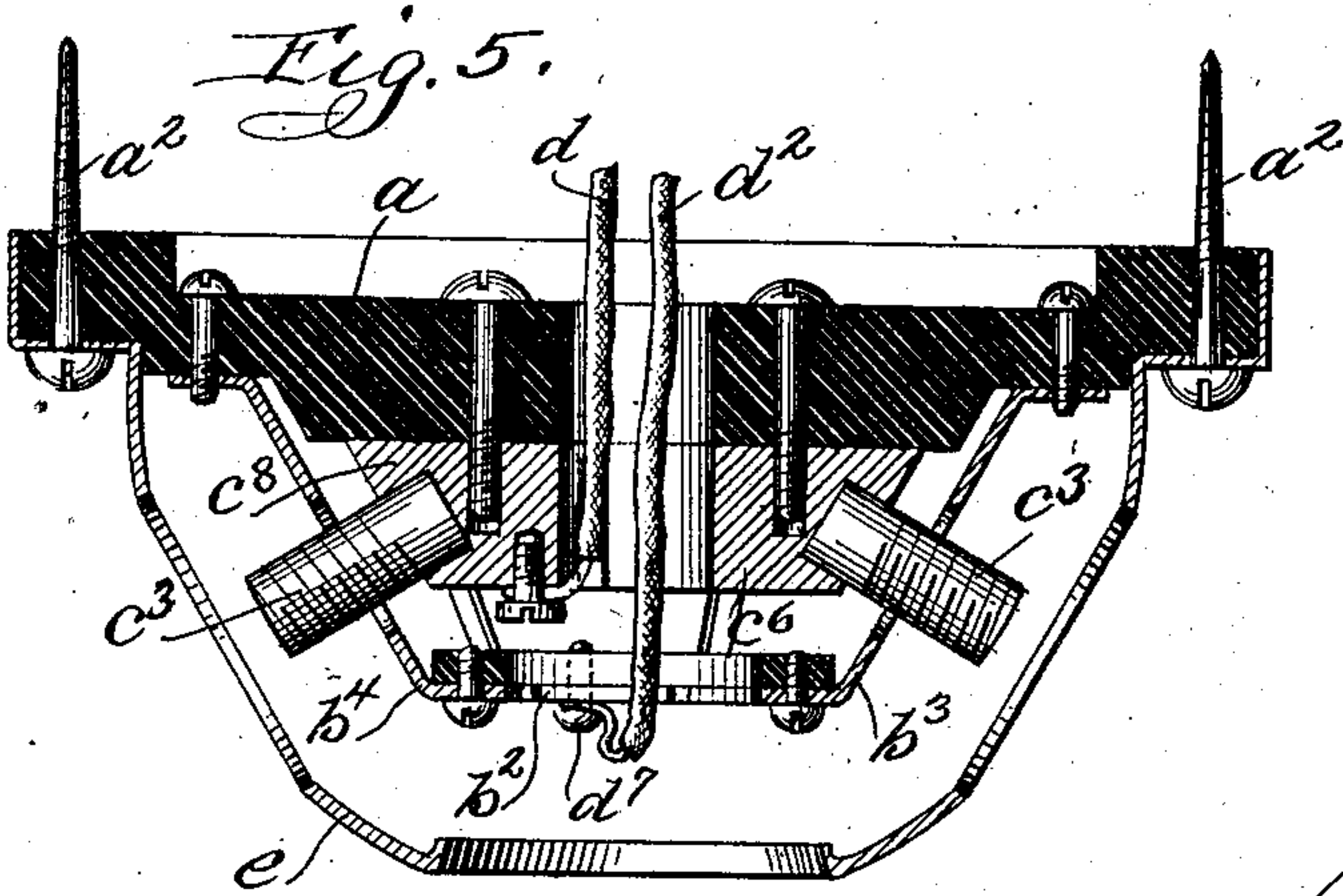
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

REUBEN B. BENJAMIN, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE BENJAMIN ELECTRIC MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

PLURAL-LAMP SOCKET.

SPECIFICATION forming part of Letters Patent No. 721,775, dated March 3, 1903.

Original application filed May 20, 1898. Renewed August 10, 1901, Serial No. 71,635. Divided and this application filed December 9, 1901. Serial No. 85,205. (No model.)

To all whom it may concern:

Be it known that I, REUBEN B. BENJAMIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Plural-Lamp Sockets, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a plural-lamp socket, my object being to provide a compact and cheaply-constructed form of socket for a cluster of incandescent lamps.

This application is a division of my application filed May 20, 1898, Serial No. 681,202, renewed August 10, 1901, Serial No. 71,635.

Figure 1 is a sectional view of a plural socket embodying my invention, taken on line 1 1, Fig. 3. Fig. 2 is a sectional view of a modification of a similar socket on line 2 2, Fig. 4. Fig. 3 is a plan view of Fig. 1 with the supporting casing or bracket and the insulating-base removed. Fig. 4 is a plan view of the modification shown in Fig. 2 with like parts removed. Fig. 5 is a sectional view of the invention adapted to accommodate the Thomson-Houston type of lamp and taken on line 5 5, Fig. 6. Fig. 6 is a plan view of the modification shown in Fig. 5 with the insulating-base removed, and Fig. 7 is a similar plan view of the general type of socket forming the subject-matter of this application.

Like letters refer to like parts in the several figures.

Upon the under side of an insulating-base a , as shown in Fig. 1, is supported a bowl-shaped contact-plate consisting of the several sections $b^2 b^3 b^4$, each section itself constituting a separate contact-plate and all sections united to form the composite plate referred to. These sections have oblique side walls and are secured at their upper edges to the insulating-base by means of suitable screws a' . Upon the oblique side walls are mounted the threaded shells b' to receive the lamp-bases. Within these contact-plates and supported upon the insulating-base is another

composite contact-plate formed of the sections $c^6 c^7 c^8$ and which in the present form have upturned rim portions c' , which constitute the contacts adapted to be engaged by the central terminals of the lamp when the base thereof is screwed into the shells b' . These center plates or center contacts are secured to the base a by means of suitable screws c^2 . One of the conductors d is connected with the binding-screw d' , provided upon one of the plates, as c^8 , and the other conductor d^2 is connected with a binding-screw d^3 , mounted upon one of the outer plates, as $b^2 b^3$, by means of which the electric circuit is extended to the several contacts. A casing e surrounds the lower portion of the socket, having openings to accommodate the shells b' and having upon the rear end and centrally situated relatively to the individual sockets a removable cap e' , which may be removed when it is desired to gain access to the binding-screws $d' d^3$. The upper portion of the socket is also inclosed within a metal shell, casing, or bracket e^2 , supported in the present instance by a bushing e^3 , secured to the pipe e^4 , the brackets being adapted to be brought into the socket through the said pipe.

It will be noticed from Fig. 3 that the sections of the outer and inner contact-plates are relatively overlapping, so that the lamps which are adapted to be placed in the sockets may be connected in series without the employment of wiring. As explained, one end of the circuit is connected, by means of the conductor d^2 , with the contact-plate b^2 , and the current passes from this plate to the ring terminal of the corresponding lamp, thence through the lamp to the central terminal and to the plate c^6 , which overlaps plates b^2 and b^3 . Current is then passed from plate c^6 through lamp in the second socket to plate b^3 , which overlaps plates c^6 and c^7 . The current passes through the third lamp of the cluster to plate c^7 , which overlaps plates b^3 and b^4 , and then through the fourth lamp of the cluster to plate b^4 , which overlaps plate c^7 and c^8 . The circuit is thence through the

fifth lamp to the plate c^8 , which, as shown, is connected with the opposite side of the circuit through the bracket d . By making the outer and inner contact-plates in sections which relatively overlap the several lamps of the group or as many thereof as may be desired may be connected in series through the agency of the overlapping contact-plates and without the necessity of employing connecting-wires between the several parts of the cluster. It will be noticed that the segment b^2 of the bowl-shaped plate constitutes in itself an individual contact-plate.

In Figs. 2 and 4 I have illustrated a modification wherein the insulating-base a takes the form of a ring of insulating material, which may be separated from the casing or supporting-bracket e^5 , as shown particularly in Fig. 2. Upon the sections of the outer contact-plate (designated, respectively, by b^2 , b^3 , and b^4) is supported an insulating-block g , upon the upper face of which is mounted the inner contact-sections c^6 , c^7 , and c^8 , the rim c' of which constitutes the contacts of the central terminals of the lamps. The sections of these inner and outer contact-plates are relatively overlapping, as in Figs. 1 and 2, whereby the same series connection of the lamps is secured. An insulating-bushing h is illustrated as interposed between the threaded shell b' and the casing e , which bushing serves to insulate the two metallic parts and to aline the apertures in the contact-plates b^2 b^3 b^4 with those in the casing e , as well as to hold and support the said casing e in position upon the cluster. The conductors d and d^2 in this form of the invention are brought in through the pipe e^4 and are connected, respectively, with the central contact-plate c^8 and the outer contact-plate b^2 .

In Figs. 5 and 6 I have illustrated a socket adapted for lamps having features of the Thomson-Houston type. The sections b^2 , b^3 , and b^4 of the outer contact-plate are similarly supported upon the insulating-base a , which in the present instance is shown as the base of a wall-socket adapted to be secured to the wall by means of screws a^2 a^2 . The ring-terminal of the lamp-base is adapted to engage the oblique side of the outer contact-plate, while the centrally-screw-threaded contact of the lamp is adapted to screw upon the post c^3 , a number of said posts being mounted upon a metal base divided into sections c^6 c^7 c^8 , as before, said sections being screwed to the under side of the insulating-base a , as shown in Fig. 5. These sections and those of the outer plate are relatively overlapping, as explained in connection with Figs. 1 and 2, by reason of which the lamps are connected in circuit in series. The conductor d is connected, by means of a binding-screw d' , with the central contact-section c^8 , while the contact-plate b^2 is connected, by means of a similar binding-post d^3 , with the other terminal of the electric circuit d^2 . A cover e incloses the middle portions of the cluster, as in the former instances.

In Fig. 7 a general plan view is shown which clearly indicates the overlapping sections of the inner and outer contact-plates, which general arrangement extends throughout all of the forms of the invention.

While I have described the invention with particular reference to the details of construction and as applied to the series form of cluster, I would have it understood that it is not to be so limited and that many of these features may be applied to any cluster.

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

1. The combination with an insulating-base, of a plurality of contact-plates mounted upon said base and arranged about a common center, said plates carrying the outer contacts for the lamps, inner contacts for the lamps suitably supported, and a cover having openings to accommodate the lamps, substantially as described.

2. The combination with an insulating-base, of a plurality of concentrically-arranged contact-plates mounted upon said base and carrying the outer contacts for the lamps, center contacts for the lamps suitably supported, and a cover having openings to accommodate the lamps, substantially as described.

3. The combination with a base, of a plurality of separate contact-carrying parts mounted upon said base and arranged about a common center, associated lamp-holding devices for holding the lamps in operative position, and a cover having an opening opposite each lamp-holding device, substantially as described.

4. The combination with a base, of a plurality of separate metallic parts mounted directly upon said base and carrying the contacts for the outer lamp-terminals, center contacts suitably supported, lamp-holding devices for maintaining the lamps in operative position, and a cover having an opening opposite each lamp-holding device, substantially as described.

5. The combination with a base, of a plurality of separate metallic parts mounted directly upon said base and having shell-like threaded portions constituting the lamp-holding devices and the outer contacts for the lamp-terminals, center contacts suitably supported, and a cover having an opening opposite each of said threaded portions, substantially as described.

6. The combination with a base, of a contact-plate mounted thereon and having an oblique side wall provided with an opening to accommodate the central lamp and socket terminals, an associated lamp-holding device and a center contact suitably supported, substantially as described.

7. The combination with an insulating-base, of a plurality of contact-plates having oblique side walls carried by the base, the approached or adjacent ends of said plates being suitably

secured together while their other ends are secured to the base and center contacts for the lamps, substantially as described.

8. In a plural-lamp socket, the combination with an insulating-base, of a plurality of contact-plates having oblique side walls carried by the base, and secured thereto by their outer ends, a ring secured to their approached or adjacent ends, and center contacts for the lamps, substantially as described.

9. In a plural-lamp socket, the combination with an insulating-base, of a plurality of contact-plates having oblique side walls carried by the base, and secured thereto by their outer ends, an insulating-ring secured to their approached or adjacent ends, and center contacts for the lamps, substantially as described.

10. The combination with an insulating-base, of a bowl-shaped contact element formed of a plurality of sections or plates having oblique side walls, said plates carrying the outer contacts for the lamps, and inner contacts for the lamps suitably supported, substantially as described.

11. In a plural-lamp socket, the combination with an insulating-base, of a bowl-shaped contact element formed of a plurality of plates or sections having oblique side walls, a plurality of contacts for the ring-terminals of the lamps arranged concentrically around said oblique side walls, and a series of contact-plates for the central terminals of the lamps mounted within and insulated from the oblique side walls of said sectional contact-plates, means adapted to secure the lamps in operative relation with said contacts, the sections of said outer contact-plates and said inner contacts being arranged to alternately overlap, whereby the lamps are connected together in series, substantially as described.

12. In a plural-lamp socket, the combination with a suitable base, of a contact element of conducting material mounted thereon and comprising a plurality of plates or sections having oblique side walls and provided with a plurality of openings to accommodate the central lamp and socket terminals and carrying the contacts for the ring-terminals of the lamps, center contacts for the lamps, means adapted to secure the lamps in operative relation with said contacts, and electrical connections between said contacts to include a plurality of lamps in series, substantially as described.

13. In a plural-lamp socket, the combination with a contact element carrying the terminals for the ring-contacts of the lamps and formed of a plurality of sections, of terminals for the center lamp-contacts cooperating with said sections, means adapted to secure the lamps in operative relation with said contacts, and electrical connections between said terminals to include a plurality of lamps in series, substantially as described.

14. In a plural-lamp socket, the combination with a contact element formed of a plurality of sections of conducting material pro-

vided with a plurality of terminals for the ring-contacts of the lamps and having a plurality of openings, terminals for the center lamp-contacts one at each opening and cooperating with said terminals for the ring-terminals, means to secure the lamps in operative relation with said contacts, and electrical connections between said terminals to include a plurality of lamps in series, substantially as described.

15. A suitable base, a plurality of lamp-holding devices and associated contacts mounted thereon, an inclosing casing having an opening opposite each lamp-holding device to accommodate the lamp-bases, and contact strips or plates between the contacts of said lamp-holding devices to connect the lamps in series.

16. A suitable base, a plurality of lamp-holding devices and associated contacts mounted thereon, an inclosing casing having an opening opposite each lamp-holding device to accommodate the lamp-bases, and contact strips or plates supported upon said base and extending between said contacts to connect the lamps in series.

17. The combination with a suitable base, of a contact element comprising a plurality of plates or sections of conducting material provided with a plurality of openings to accommodate the lamps, lamp-holding devices and associated contacts, said contact-plate carrying one contact of each lamp-holding device, and the other contact thereof being suitably supported, said sections or plates and contacts being arranged to connect the lamps in series.

18. In a cluster-fixture, the combination with a base of insulating material, of lamp-sockets each having a shell and a center contact, plates mounted directly on said base connecting together the shell-contacts of one pair of sockets, and a conducting-strip connecting the center contacts of another pair of sockets, one socket being common to each of said pairs, whereby all the lamps are connected in series.

19. In a plural-lamp socket, the combination with an insulating-base, of a plurality of lamp-holding devices and associated contacts mounted thereon, a pair of binding-posts carried by the socket to connect it with the conductors of the electric circuit, and conductors extending between said contacts so as to connect said lamps in series between said binding-posts, substantially as described.

20. In a plural-lamp socket, the combination with an insulating-base, of a plurality of lamp-holding devices and associated contacts mounted thereon, a pair of binding-posts carried by the socket to connect the same in the electric circuit, conducting strips or plates to connect adjacent pairs of inner contacts together and alternate pairs of outer contacts together, and means to connect the first and last contact of the series with the binding-

posts, whereby the lamps are connected in series between said posts, substantially as described.

21. In a plural-lamp socket, the combination with an insulating-base, of a plurality of lamp-holding devices and associated contacts mounted thereon, a pair of binding-posts carried by the socket to connect the same in the electric circuit, and conducting-strips extending between lamps of the cluster to connect them in series between the binding-posts, substantially as described.

22. In a plural-lamp socket, the combination with a base, of a plurality of separate

contact-plates mounted thereon, each provided with an opening to accommodate the central lamp and socket terminals, an associated lamp-holding device for each opening and a center contact therefor suitably supported, substantially as described.

In witness whereof I have hereunto subscribed my name in the presence of two witnesses.

REUBEN B. BENJAMIN.

Witnesses:

ROBERT LEWIS AMES,
M. R. ROCHFORD.