

No. 700,650.

Patented May 20, 1902.

C. HUBERT.
ELECTRIC LAMP.

(Application filed Aug. 9, 1900. Renewed Jan. 17, 1902.)

2 Sheets—Sheet 1.

(No Model.)

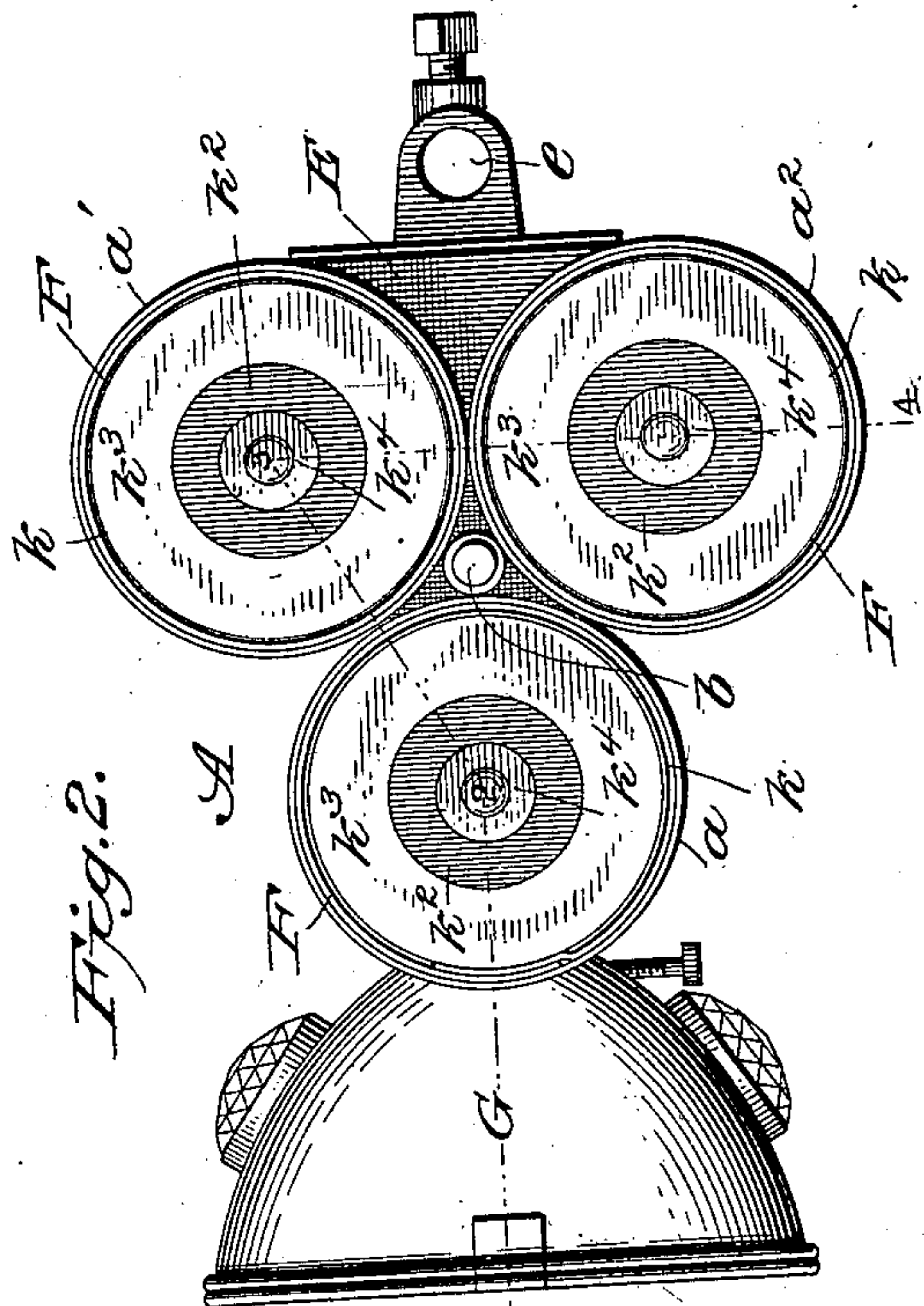


Fig. 2.

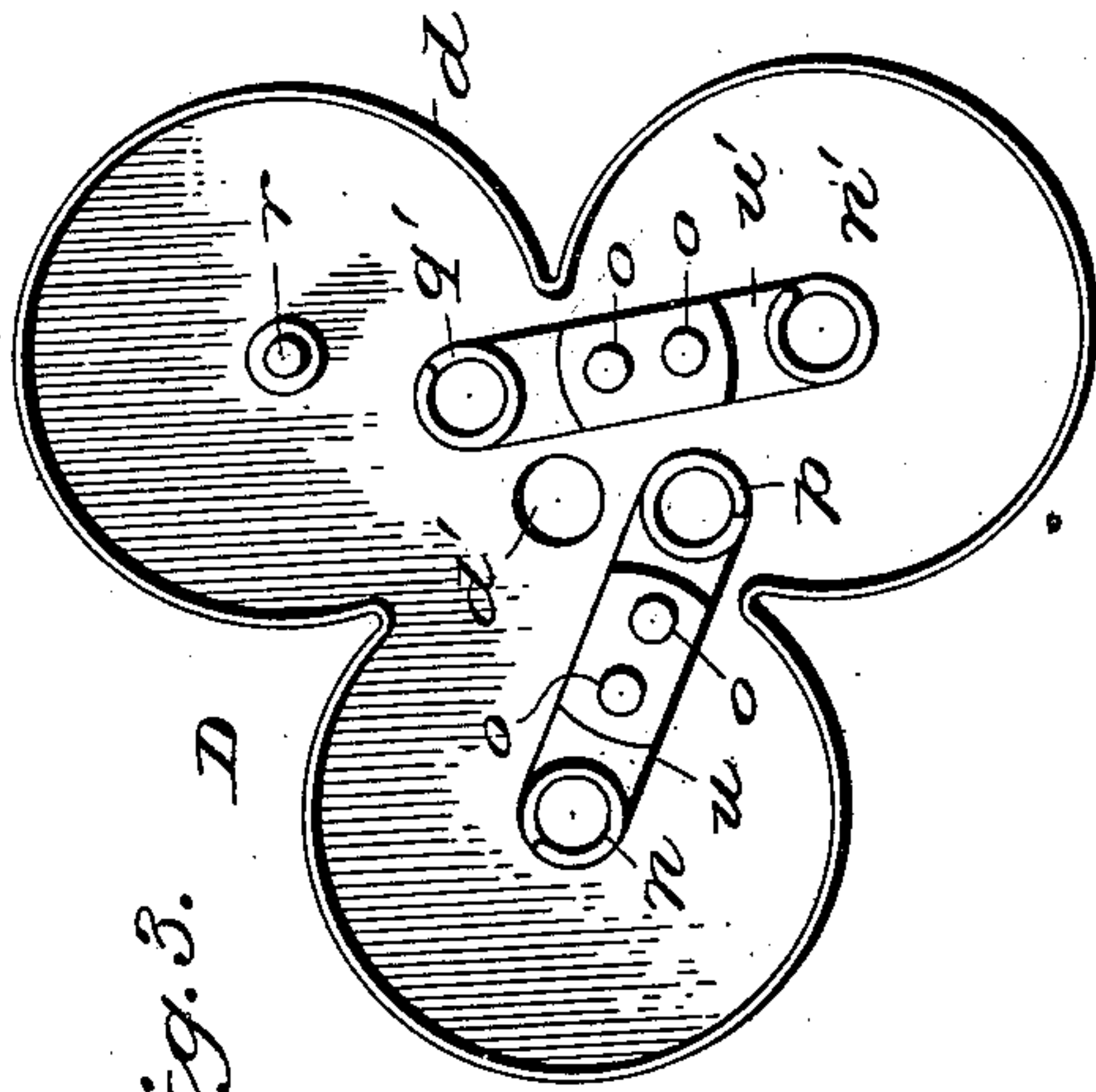


Fig. 3.

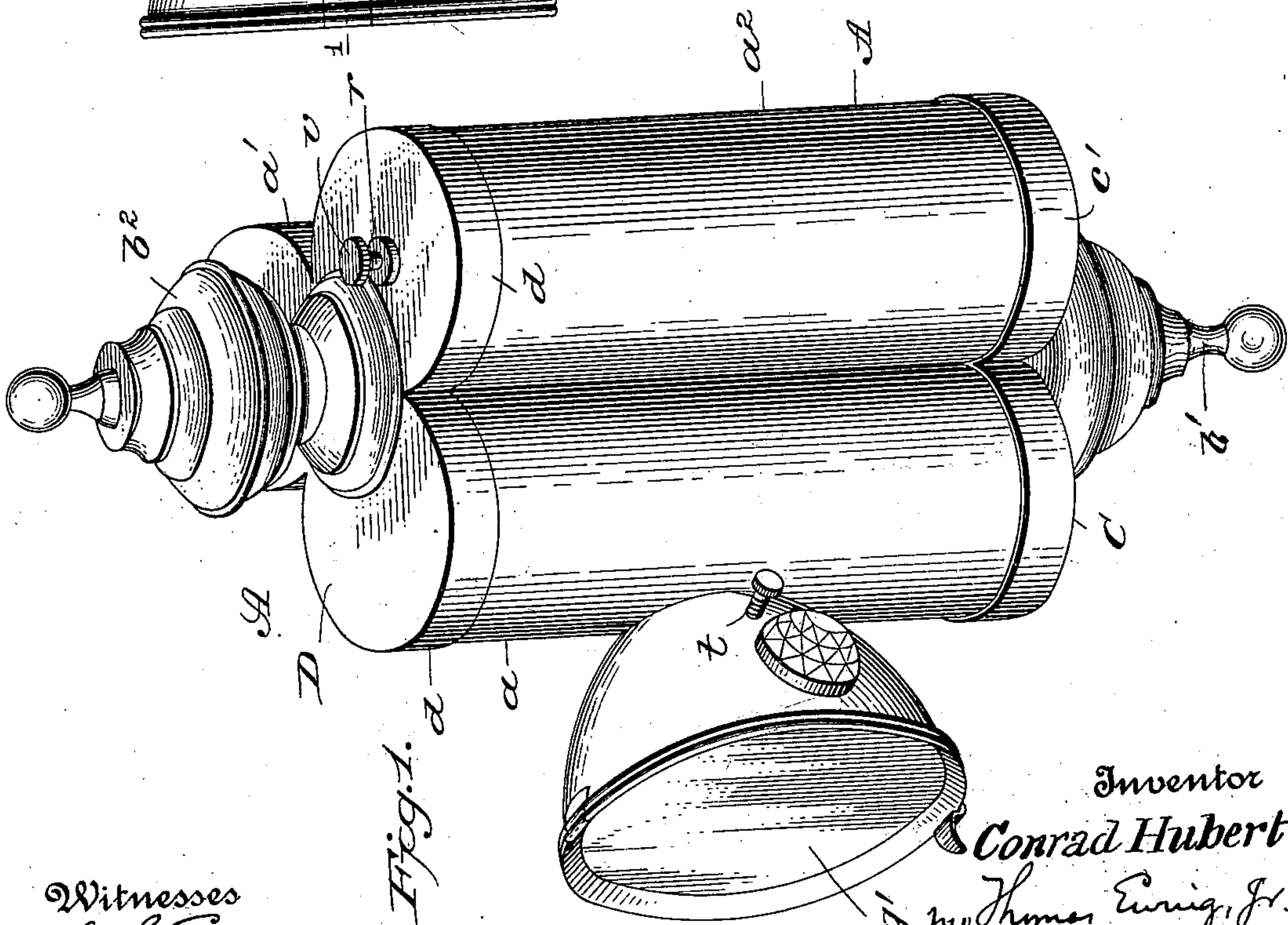


Fig. 1.

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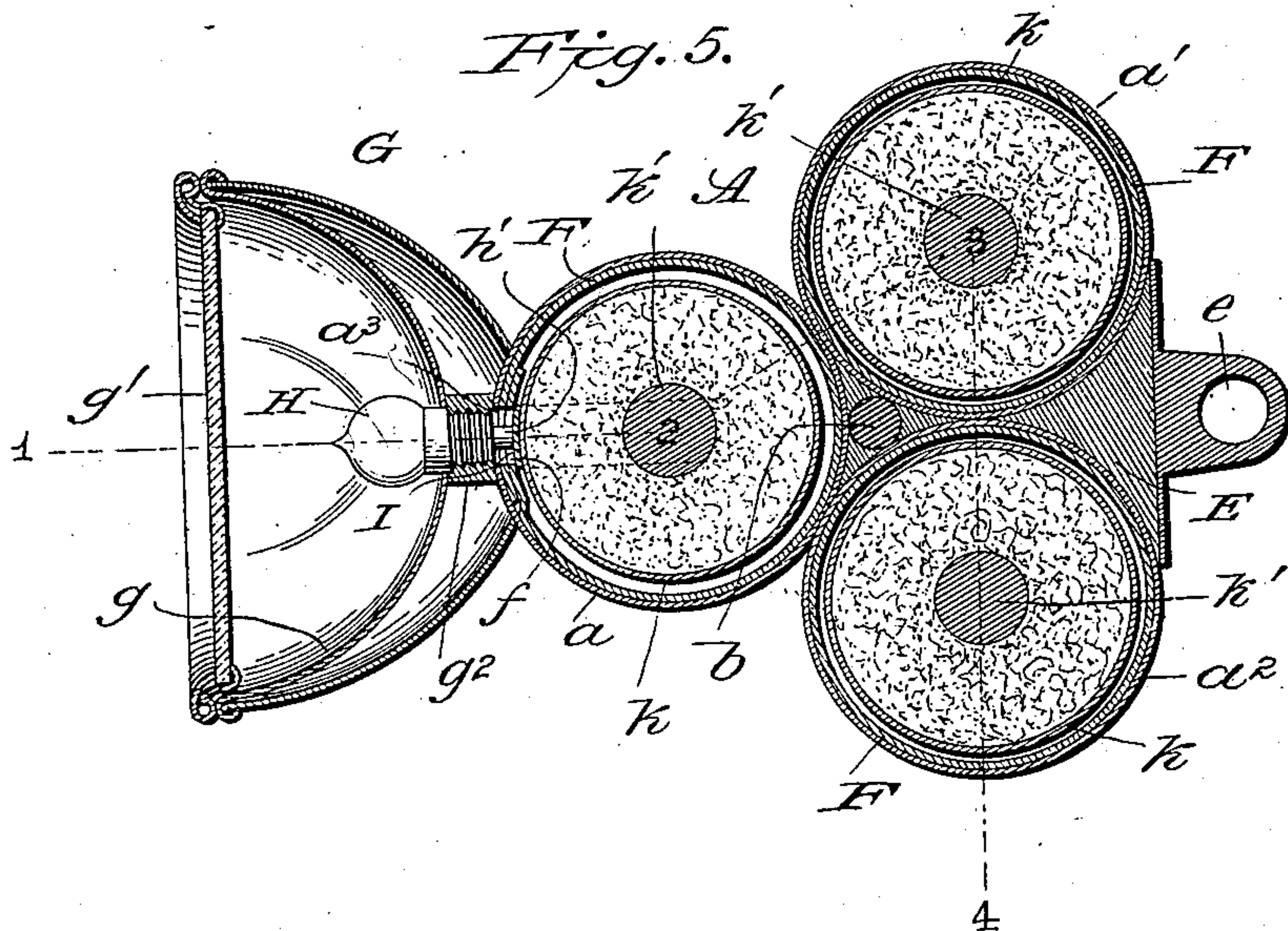
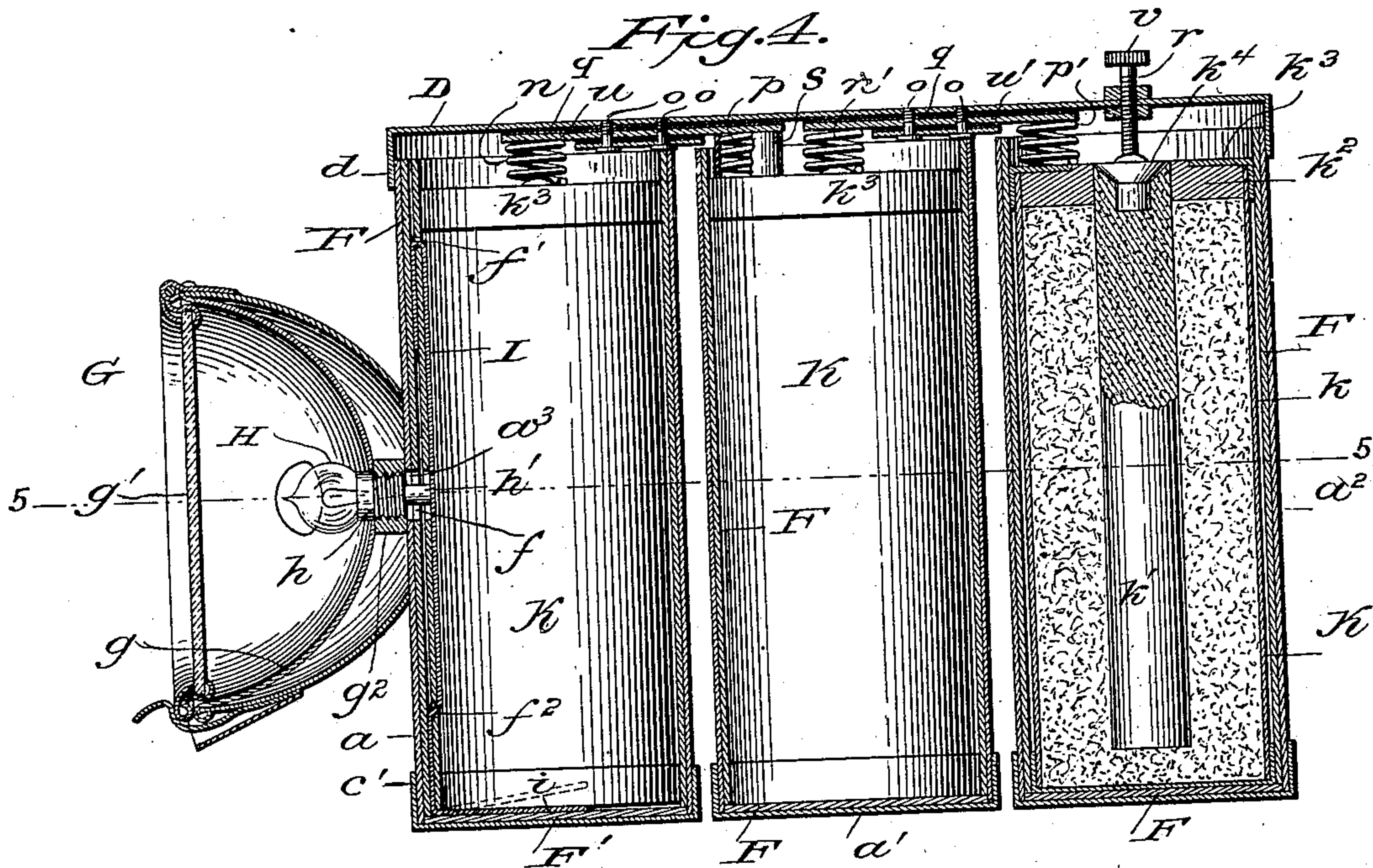
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2 Sheets—Sheet 2.

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

CONRAD HUBERT, OF NEW YORK, N. Y.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 700,650, dated May 20, 1902.

Application filed August 9, 1900. Renewed January 17, 1902. Serial No. 90,198. (No model.)

To all whom it may concern:

Be it known that I, CONRAD HUBERT, a citizen of the United States of America, and a resident of New York city, borough of Manhattan, in the county and State of New York, have invented certain new and useful Improvements in Electric Lamps, of which the following is a specification.

My invention relates to certain improvements in electric lamps and in batteries adapted for use in connection therewith; and it consists in the construction, arrangement, and combination of the several parts of which it is composed, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a perspective view of a lamp constructed in accordance with this invention. Fig. 2 is a plan view thereof with the cover removed. Fig. 3 is an inverted plan view of the cover. Fig. 4 is a vertical section taken on the line 1 2 3 4 of Figs. 2 and 5, the cover being shown as in place and two of the battery-cells being shown in elevation. Fig. 5 is a horizontal section on line 5 5 of Fig. 4.

The casing A consists of a series of cylinders a a' a^2 , three being shown in the drawings symmetrically disposed around a central post b . As shown, each of the cylinders is by preference formed of sheet metal and each cylinder is secured to the adjoining cylinders and to the central post by brazing or soldering or in some other suitable manner, the lower ends of the several cylinders being closed by a base-plate c of suitable shape. In the particular construction here shown it is in the shape of a trifoil, the edges of the plate being flanged, as at c' , to encircle the exposed lower edges of the cylinders. The lower end of the central post b projects through the base-plate and receives a knob b' to give a finished appearance to the bottom of the casing. The cover D is also formed of sheet metal cut to proper shape, the edges thereof being flanged, as at d , to fit snugly over the exterior of the upper ends of the group of cylinders constituting the casing. The cover is centrally apertured, as at d' , and through the aperture formed therein the upper end of the central post b projects, the latter being threaded to receive the knob b^2 , which when

screwed home serves to force the cover into place and holds it. A block E is secured to the sides of the casing and is socketed, as at e , by which the lamp may be hung to a suitable bracket.

The cylinders are lined upon their sides and bottom with a layer F, of press-board, cardboard, vulcanized fiber, or other suitable insulating material, and the cylinder a has attached to the forward face thereof a hood G, containing a reflector g and having its forward end closed by a glazed door g' , the reflector being soldered to the hood or otherwise in electrical contact with the cylinder a , from which it is carried. A threaded socket g^2 is formed in the center of the reflector, and an incandescent lamp-bulb H is screwed therein, the collar h on the bulb being in electrical connection with one terminal of the filament of the lamp-bulb, the opposite terminal being correspondingly connected to a stud h' , projecting rearwardly from the base of the lamp-bulb.

The forward side of the cylinder a is apertured in line with the socket g^2 in the reflector, as is shown at a^3 , and the insulating-lining of the said cylinder is also correspondingly apertured to register therewith, as shown in Figs. 4 and 5. This lining is formed of a piece of press-board rolled into a cylinder, with the abutting edges of the board overlapping. Each of the abutting edges is provided with an aperture f , registering with each other and with the aperture a^3 in the casing. A strip of metal I has its upper end caught by being inserted through a slit f' in the inner edge of the lining and is brought down over the aperture f therein and has its lower end caught by being passed through a slit f^2 , also in the inner edge of the lining, and is then passed down between the two edges of the lining to the bottom of the cylinder, where it is bent in toward the center thereof, the inwardly-projecting end i being sprung upwardly (see dotted lines, Fig. 4) to force it into good electrical contact with a battery-cell contained in the casing. It will be noted that while by this construction those parts of the strip I that lie upon the outside of the inner edge of the lining are held from contact with the side of the casing by the outer edge of the insulating-lining interposed between them and that while the

inwardly-projecting end i of the strip is in a like manner protected from contact with the bottom of the cylinder by the insulating bottom lining F' the stud h' of the lamp when the latter is screwed into its socket projects through the aperture a^3 in the casing and the apertures f in the lining into contact with the strip I .

In each of the cylinders a cell K is contained. Each cell consists of a cylindrical cup k , the cup itself forming, by preference, one of the elements of the cell and inclosing the centrally-located opposite element k' and the electrolyte. In the precise construction used by me the cup k is of zinc and the centrally-located element k' is of carbon, the top of the cell being closed by a layer of insulating-cement k^2 . A flanged annulus k^3 , of good conducting material, such as copper or brass, is soldered to the head of the cup-shaped element k and has its upper surface approximately flush with a metallic button k^4 inset in the head of the central element k' . The outer element of the cell k contained within the cylinder a rests upon and makes contact with the metallic strip I located therein, and is thus in electrical connection through the stud h' of the lamp-bulb with one terminal of the filament thereof. The cover D carries upon its under surface, but insulated therefrom, a helical spring n , so located thereon as to bear when the cover is in place upon the button k^4 upon the central element k' of the cell contained in said cylinder a . The spring-contact is, as shown, mounted on and in electrical connection with one end of a conducting-strip u , fastened to the under surface of the cover by insulated screws o and separated from such cover by insulation q . Upon the opposite end of the strip a second contact-point p , similar to the point n , is mounted in a similar manner, the spring p being so located in respect to the cylinder a' that when the cover is in place it bears upon the annulus k^3 of the cell contained in such cylinder, so that the outer element of such cell is connected to the inner element of the cell in compartment a . In a like manner the inner element of the cell in compartment a' is connected to the outer element of the cell in compartment a^2 through the contact-points n' , strip u' , and contact-point p' , and any number of cells that may be employed may be connected in this order. It will be noted that by this construction the cover carries the contacts for connecting the cells up in series and that the mere pressing of the cover in position effects the connection. A contact-maker in the form of a screw r with a milled head v is inserted in the cover at a point where it will when the cover is in place be located above the central element of the cell contained in the last cylinder, which in the drawings is the cylinder a^2 . By turning this screw its point will be forced down upon the button upon the end of the central element of the cell contained therein and complete an elec-

tric connection between it and the cover. As the cover is of conducting material and is in electrical connection with the cylinders, which are likewise of conducting material, the central element of the cell contained in such last compartment is put into electrical connection through the cover d , shell of cylinder a , hood G , reflector g , and collar h with the other terminal of the lamp-filament. The filament is thus placed in closed circuit with the cells and by unscrewing the contact-maker the circuit can be broken at will.

By the construction above described I not only provide for a simple form of lamp-casing, but I am enabled to entirely dispense with expensive binding-posts and am enabled to readily remove and replace the battery elements. Upon removing the cover and inverting the lamp the cells will fall out. To replace them by fresh cells, it is only necessary to drop the cells into the cylinders and to force the cover into place by the threaded knot b^2 , which presses the contact-points upon the cover against the contact parts upon the cells. It will be noted that as the contact-buttons k^4 upon the cells are centrally disposed thereon and the annulus is concentric thereto the above-described contacts will be made irrespective of the position of the cells in the compartments.

I may, if I so prefer, encircle one or more of the spring-contact points n and p with elastic collars s , for instance, of rubber tubing, whereby adjacent points, if accidentally brought together upon closing down the cover, will not contact and short-circuit the cell with which they contact. This accidental contact with the device herein shown is not probable, inasmuch as the button upon the central element of each cell forms a bearing which engages the hollow end of the corresponding spring-contact, the hollow bore of the latter being a socket which fits upon the button.

In order to make a good electrical connection between the collar upon the lamp-bulb and the socket in the reflector, I may use a clamping-screw t , as shown. This also holds the lamp-bulb and keeps it from working loose.

I do not in this application claim an electric cell having the construction here shown, except in combination with a casing for the said cell having parts adapted to make contact therewith, as the cell itself is broadly claimed in another application filed by me on the 1st day of April, 1901, Serial No. 53,929, as a division hereof in pursuance of a requirement of the United States Patent Office.

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

1. In an electric lamp, the combination with a series of compartments and a cover therefor, of a battery-cell located in each compartment, each cell having an annulus of conducting material upon its one end connected

with one element of the cell and surrounding the terminal of the other element which is centrally located in respect to the annulus and the same end of the cell, and contact-points contained in the compartment and so disposed as to contact with the annuli and terminals of the central elements of the several cells respectively, substantially as described.

2. In an electric lamp, the combination with a series of compartments and a cover therefor closing the ends of the compartments, of a battery-cell located in each compartment, each cell having an annulus of conducting material upon its one end connected with one element of the cell and surrounding the other element thereof, which last-named element is centrally located in respect to the cell, and spring-contact points so located in the ends of the compartments that the annuli and central elements of the several cells are held in contact with the respective contact-points by the cover, substantially as described.

3. In an electric lamp the combination with a casing having a series of metallic compartments and a metallic cover therefor closing the ends of the compartments, of an insulating-lining in the said compartments, a battery-cell located in each compartment, each cell consisting of a cup-shaped vessel forming one element of the cell and another element centrally located therein, the open end of the vessel being closed by a sealing of insulating material, the casing being surmounted by an annulus electrically connected thereto, a lamp having its one terminal in electrical connection with the battery vessel in an end compartment and its opposite terminal in connection with the casing, a contact located in the said end compartment and making contact with the central element of the cell placed therein; two spring-contacts in one or more of the other compartments, making contact with the annulus and the central element of the cells contained therein respectively, a spring-contact in the last compartment of the casing making contact with the annulus of the battery contained therein, the said contact-points connecting the several battery-cells in series, and a contact-maker adapted to connect the central element of the cell in the last compartment with the casing, substantially as described.

4. The combination with a suitable conducting apertured casing, of a battery-cell contained therein, an insulating-lining between the cell and casing having overlapping apertured edges, the apertures in which register with each other and with the aperture in the casing, a conducting-strip partly contained within the lining of the casing and partly between the overlapped edges of the

lining, an electric-lamp bulb having its one terminal in electrical connection with the casing and its other terminal projecting through the casing and insulating-lining into contact with said strip, and means for closing the circuit between the casing and the other element of the battery, substantially as described.

5. A lamp-casing consisting of a central rod having a threaded upper end and a series of metallic compartments grouped around it and secured thereto, a hood secured to one of the compartments and containing a lamp-bulb, a cover for the said casing consisting of a metallic sheet with flanged sides to fit upon the exposed edges of the compartments, and a knob screwing upon the central rod and forcing the cover into place, substantially as described.

6. The combination with a casing consisting of a plurality of compartments to receive battery-cells, a lamp-bulb means contained in one of the compartments for connecting one terminal thereof to one element of one of the cells, a cover for the casing, means carried by the cover for connecting the several cells together, and means for closing the circuit between the cells and the opposite terminal of the lamp-bulb, substantially as described.

7. The combination of a battery-casing having socketed spring-pressed contact-points therein at one end thereof, and a battery-cell contained in the casing and having its two elements terminating respectively in a button and a surrounding annulus adapted to contact with the contact-points, substantially as described.

8. The combination in a battery-casing, of two spring-pressed contact-points, consisting each of a helix of wire, at one end thereof and adjacent to each other and an insulating-cover for each of the contact-points consisting of a section of elastic tubing, substantially as described.

9. In an electric lamp the combination of a battery-cell having two elements and having a centrally-disposed contact-point and a surrounding annulus upon the same end thereof, substantially flush with each other, and connected respectively with the several elements of the cell, and a casing for the cell having contacts to contact with the central part and surrounding annulus of the cell, substantially as described.

Signed by me, in New York city, this 1st day of August, 1900.

CONRAD HUBERT.

Witnesses:

THOMAS EWING, Jr.,
SAMUEL W. BALCH.