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C. S. RYERSON.

UNIVERSAL FIXTURE TAP AND RECEPTACLE HOLDER.

APPLICATION FILED MAY 25, 1904.

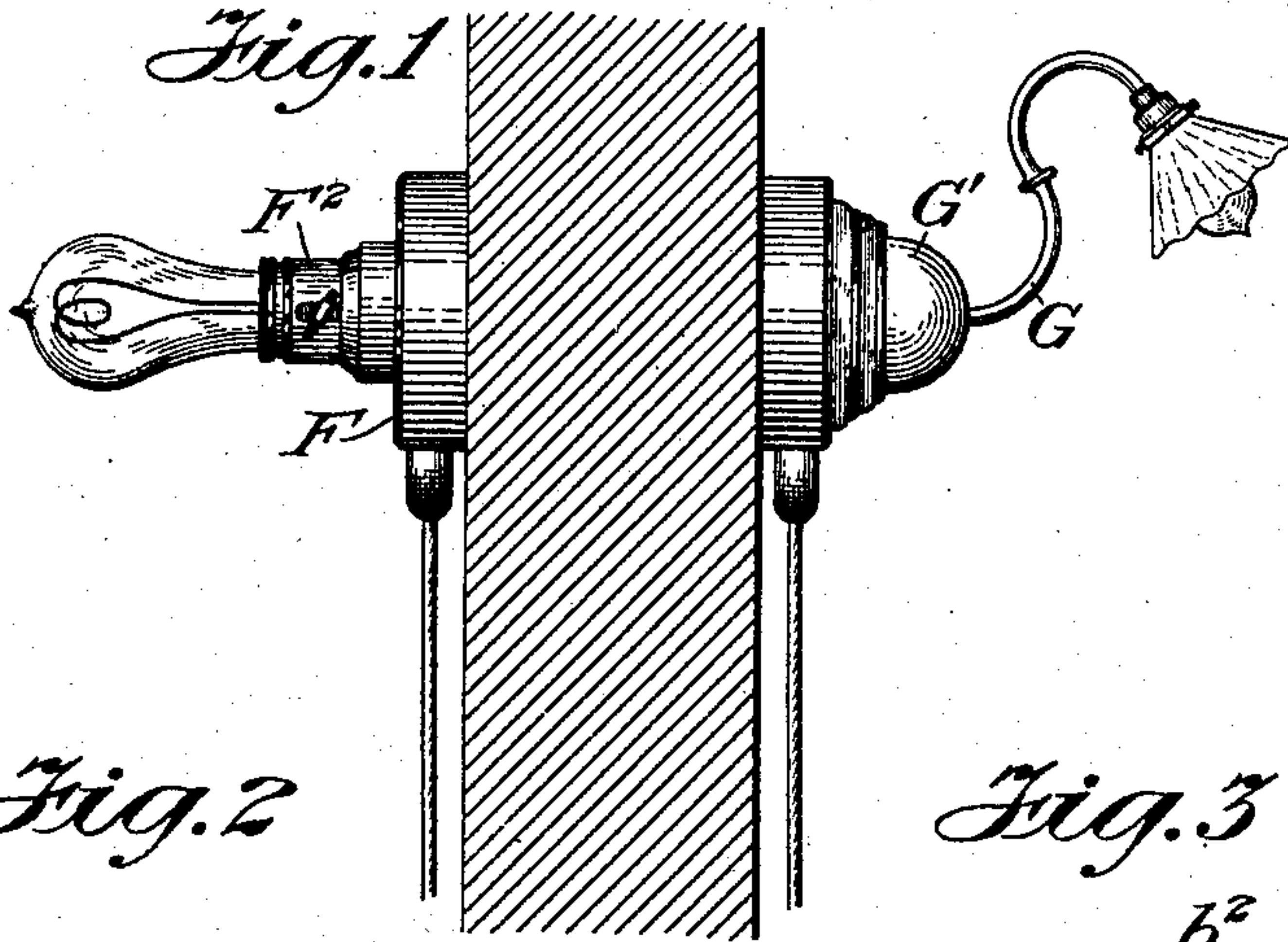


Fig. 2

Fig. 3

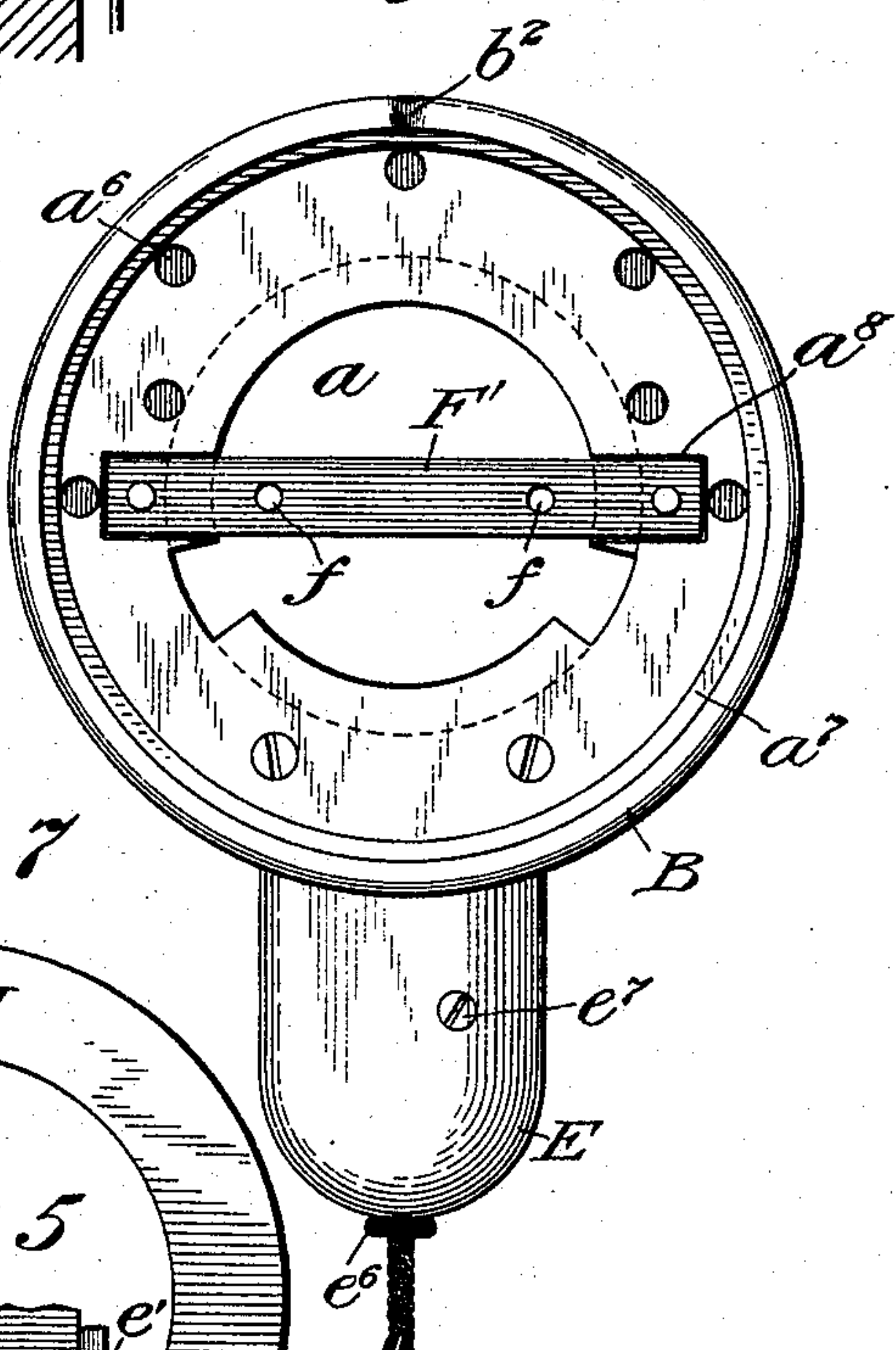
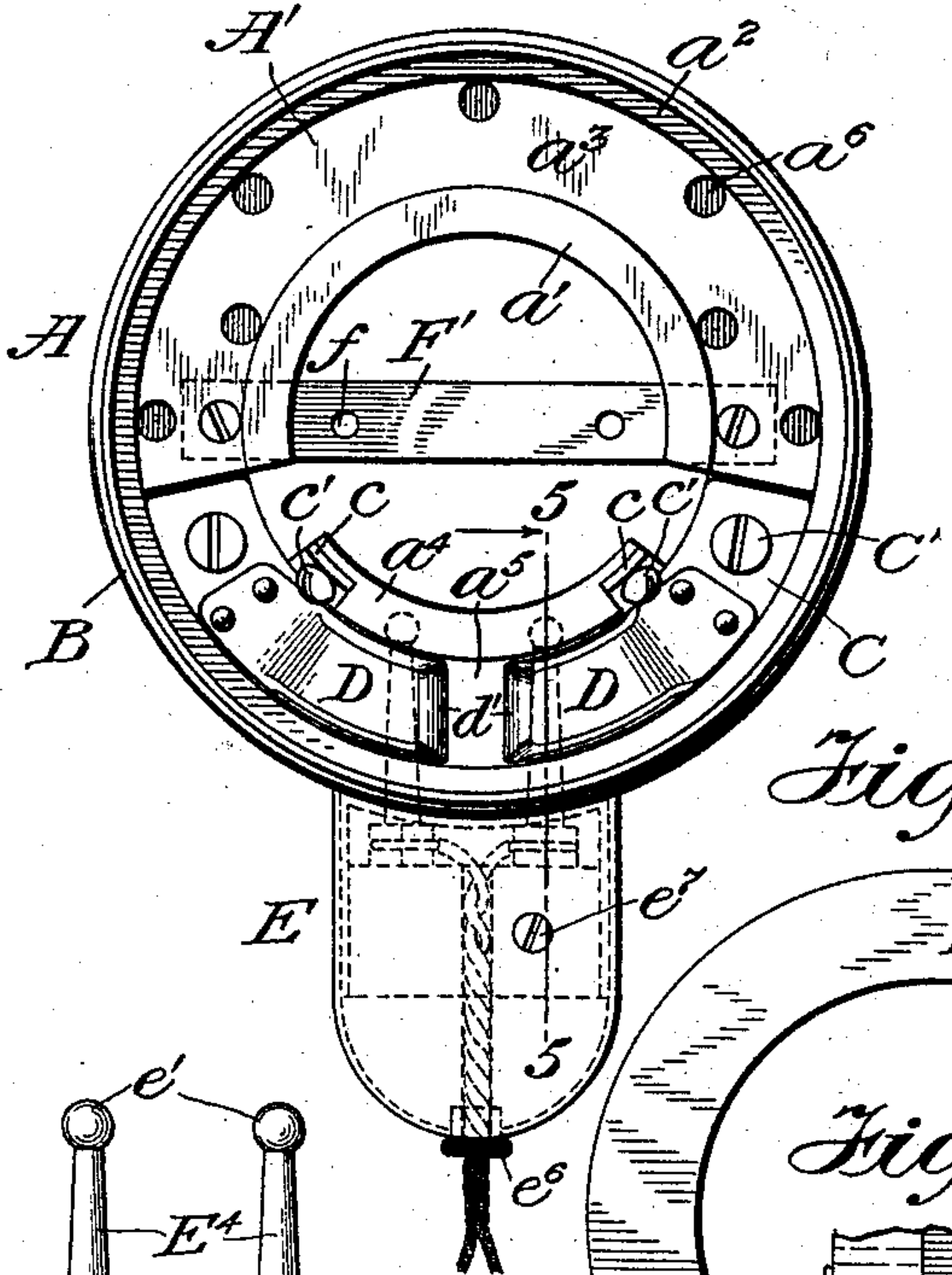


Fig. 7

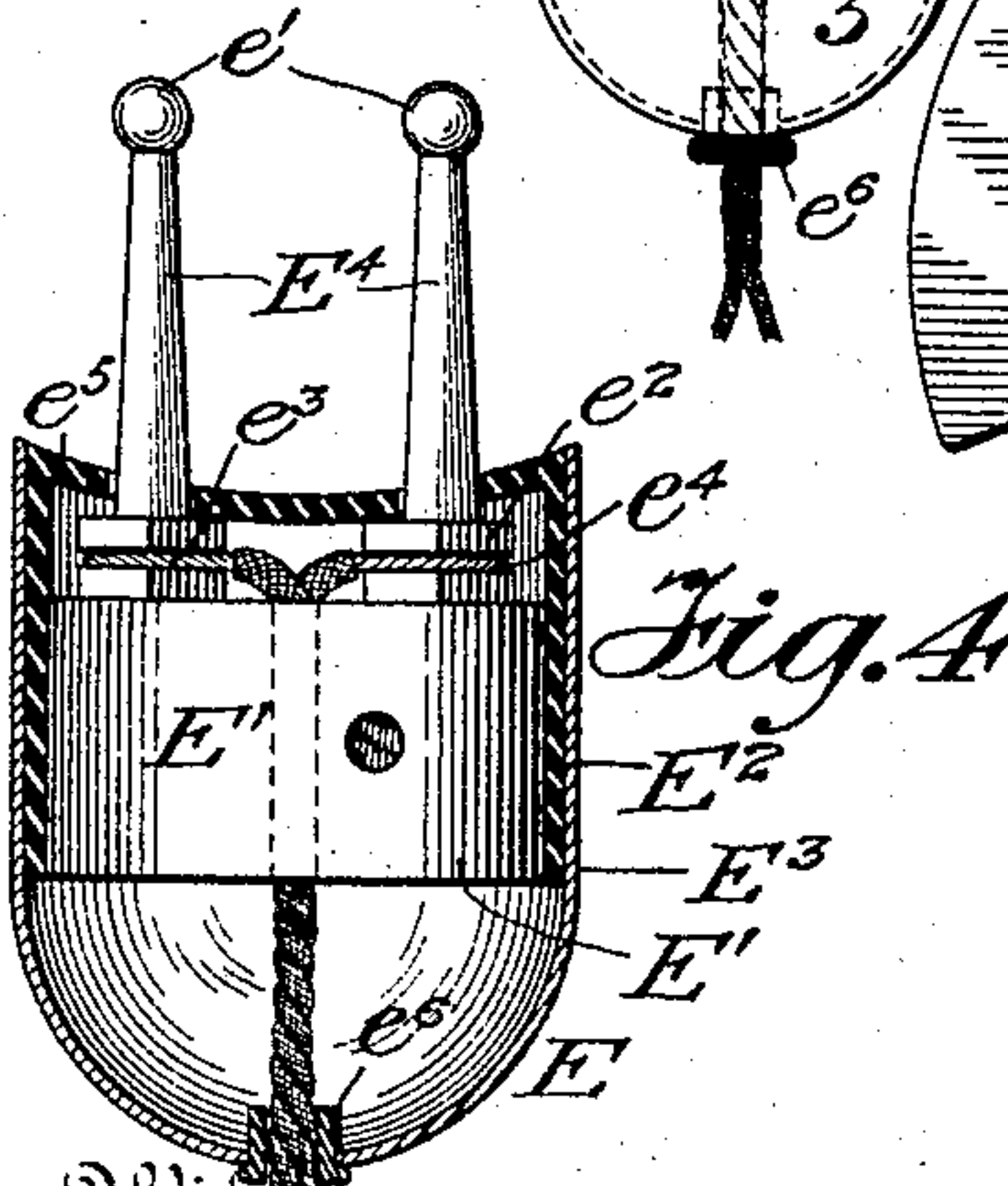
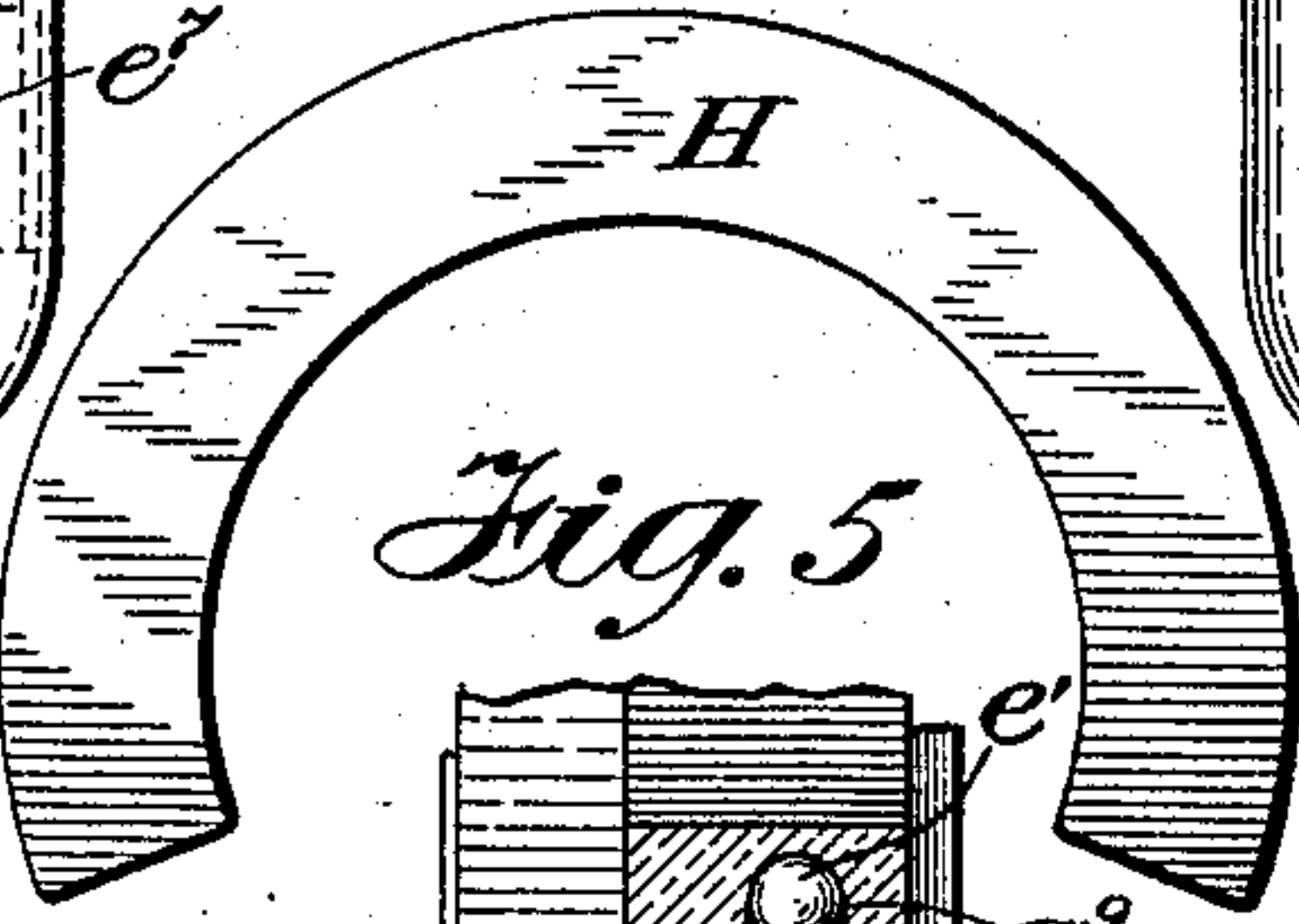


Fig. 4

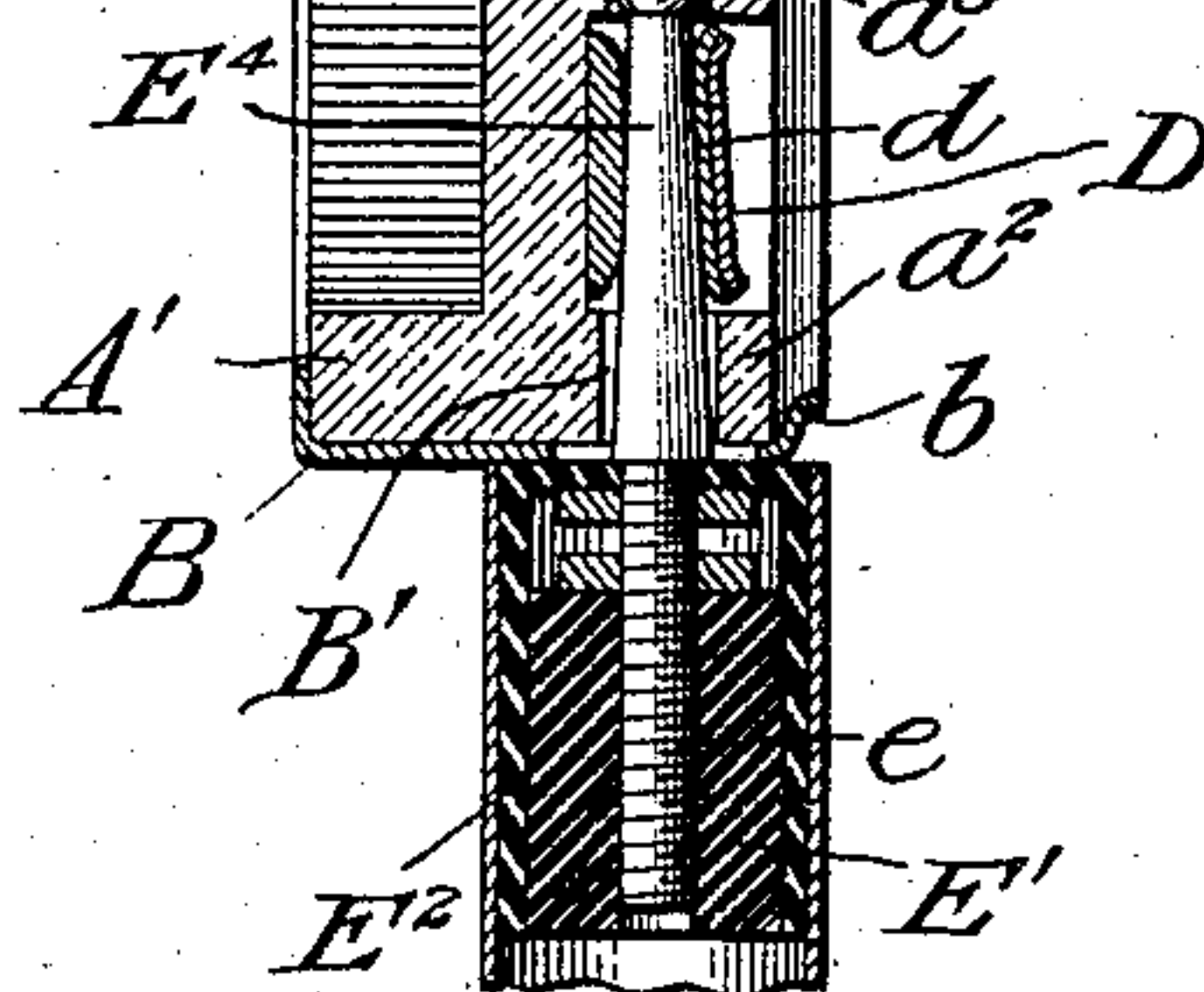


Fig. 6

Witnesses
Chas. J. Clagett
Chas. L. Wolf

Inventor
Charles S. Ryerson
By his Attorney
Charles A. Stephens.

UNITED STATES PATENT OFFICE.

CHARLES S. RYERSON, OF NEW YORK, N. Y.

UNIVERSAL FIXTURE-TAP AND RECEPTACLE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 782,524, dated February 14, 1905.

Application filed May 25, 1904. Serial No. 209,642.

To all whom it may concern:

Be it known that I, CHARLES S. RYERSON, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Universal Fixture-Taps and Receptacle-Holders, of which the following is a specification.

The subject of the present invention is a universal fixture-tap and receptacle-holder involving more particularly high efficiency, as well as comparative simplicity of construction.

There are also certain features connected with the invention which in themselves are regarded as being especially novel.

With the above purposes in view the invention consists in the improved details and combinations of parts hereinafter fully set forth and illustrated in the accompanying drawings, in which—

Figure 1 represents a section of the wall of a building upon opposite sides of which are different adaptations of my invention. Fig. 2 is a front view of the base designed to serve in connection with either a fixture or receptacle-holder, the plug being represented in position. Fig. 3 discloses the same parts shown in Fig. 2, but viewed from the reverse side thereof. Fig. 4 is a detail sectional view of the plug on a slightly-enlarged scale. Fig. 5 is a detail sectional view of portions of the plug and base, the plane of section being that indicated by the broken line 5 5, Fig. 2. Fig. 6 is a detail view of one of the contact-springs. Fig. 7 is a detail view of the fiber insulator employed for covering the contact springs and plates to prevent possibility of "grounds."

In numerous instances in locating incandescent electric lamps in buildings, &c., a base is provided which either supports a lamp-socket or else is provided with a canopy through which a bracket-arm extends, which arm carries the lamp-socket. Provision is also made whereby the lamp-circuit established through said base can be tapped to run an electric fan or utilized for some other purpose, as may be found desirable. It is to meet these conditions in a highly-efficient and simple manner that I have designed the novel con-

struction which I will proceed to describe in detail.

The base A comprises a porcelain body A', shown as being of circular configuration and containing a central opening a of comparatively large diameter. At its forward side the body A' has a semicircular shoulder a' coincidently located with regard to the opening a , and which shoulder, together with a forward circular marginal flange a^2 of the body A', forms a front semicircular depression a^3 . A front shoulder a^4 of segmental character likewise coincides with the opening a and is connected with the marginal flange a^2 by a short strut a^5 . Holes pierce the body A' at the point of the depression a^3 for the passage of screws a^6 , by which the base can be attached to the wall or other surface on which it is to be located. At its back the body A' has a comparatively deep marginal flange a^7 , and at points diametrically opposite and intersecting the opening a are shallow rectangular recesses a^8 .

A sheet-metal rim B peripherally incases the body and is connected thereto by having its front and rear projecting portions b b' spun over the front and rear flanges a^2 a^7 , respectively. As will be noted by reference more particularly to Fig. 5, the rim portion b' is spun full upon the flange a^7 , while the forward portion b forms a curved contraction, the purpose of which will be disclosed later on.

Openings B' extend radially both through the rim and flange a^2 of the body and communicate with the depressions at either side of the strut a^5 . The segmental shoulder a^4 contains small pockets a^9 , which are on a line with said openings B'. For the purpose of maintaining the openings in the rim in registration with those in the flange a^2 the rim portion b' is indented at one point, as indicated at b^2 , Fig. 3, to engage within a notch in the body-flange a^7 .

Curved metal plates C snugly occupy the spaces at both sides of the strut, and bearing in these plates are the large screws C', by which connection is made with the line-wires. Forwardly-bent ears c of these plates occupy recesses therefor in end portions of the shoulder a^4 , and seated in these ears are the smaller

screws c' for the connection of the fixture-wires.

It will be appreciated that the peculiar disposition of the ears c and screws c' is such that the latter are readily accessible for the application of a screw-driver in connecting or disconnecting the fixture-wires, thereby permitting said screw-driver to be manipulated while held substantially horizontal, thus allowing the fixture-wires to be connected and disconnected with the smallest possible opening between canopy and base.

Riveted to the plates C are the contact-springs D, which are each made from a piece of phosphor-bronze and provided with an under fold d , which has the effect of increasing the tensile strength of the spring. Each plate and its spring extends between one of the openings B' and pocket a^9 , aligned therewith, the opposite surfaces of the plate and its spring being so inclined as to adapt them for intimately conforming throughout their entire width to the tapering character of the plug-stud when inserted between them. The bend d' at the free extremity of each spring is slightly expanded and bent downward to secure an embracing effect with respect to the plug-stud, and thereby promote the contact.

The plug E comprises a block E' of fiber composition and is tapped for the reception of the screw-threaded shanks e of the studs E⁴. Those portions of the studs which project beyond the block and are to enter the perforations in the base A are of the tapered character (indicated in Figs. 2, 4, and 5) and terminate in spherical heads e' . At the point where the projecting portion of each stud merges with its shank it is of the greatest diameter. This admits of the application to each shank and external to the block of a pair of nuts e^2 , between which are clamped the terminals e^3 e^4 of the wires carried by the plug, without the liability of said nuts when unscrewed unduly shifting along the projecting portion of the studs. Manifestly each nut e^2 bearing against the end of the block is, in effect, a lock to prevent the unscrewing of the stud-shanks. The conductors leading from the plug are led through a central opening in the block E' and have proper connection with regard to the purpose for which the tap is intended.

With a view of preventing short-circuiting and otherwise preserving the functions of the plug a fiber lining E² is employed, said lining comprising an end e^5 , containing two perforations through which the projecting parts of the studs extend. The end e^5 in connection with the rest of the fiber lining incases the nuts e^2 , wire terminals, and block. These parts are in turn embraced by a metal shell E³ of the configuration generally indicated, and in the rounded end of which is seated a bushing e^6 , of hard rubber or equivalent material, through which the plug-cord leads. The

block, fiber lining, and metal shell are connected together by a screw e^7 , passing through the shell and lining and engaging within the block.

From the description thus far it will be easy to comprehend that when the plug connection is to be made said plug is manipulated, so that its studs will be introduced through the openings B', the rounded heads of the studs forcing the free ends of the contact-springs away from the plates C, said stud-heads ultimately clearing said springs and being received in the pockets a^9 . The springs will therefore close upon the studs to establish the contact relation heretofore adverted to, and the stud-heads will be yieldingly held by the inner edges of said springs and contact-plates with sufficient force as to require a positive effort in order to effect their withdrawal, while their insertion can be accomplished without difficulty. It will also be noted that such plug arrangement does not involve any turning movement such as would be incident were a screw connection involved.

As will be perceived by reference to Fig. 1, the character of the base and peculiar provision of the plug-tap are such that the plug-cord will hang close to the wall, thus resulting in a compact and highly-desirable arrangement. By having the cord pass entirely through the center of the block E' a strong mechanical connection is provided. Moreover, there is no liability of a loose connection between the studs and the block, as the former are screwed into said block and retained by the inner nuts e^2 , which have the additional function of affording bottom connections for the conductors e^3 e^4 .

The base can be conditioned for directly supporting a lamp-socket or for a fixture-bracket. When a lamp-socket is to be attached, a face-plate F, of sheet metal, is employed, said plate being of annular form and containing a central opening with two diametrically located screw-perforations in immediate relation thereto. This plate has also a marginal flange adapted to take over the portion b of the rim B, so as to conceal the joint and secure the effect of a continuous metal exterior. A transverse metal bar F' spans the base-opening a , the ends of said bar being snugly confined with the rear recesses a^8 . The lamp-socket F² is then so applied that it will bear against the face-plate F, the extended securing-screws of said socket extending through the perforations in the plate and thread engaged within similarly conditioned perforations f in the bar F'.

When the base is to serve in connection with a fixture-arm G, the plate F is discarded and the bar F' is not utilized, a canopy G', through which the arm G extends, being employed, said canopy having a marginal flange to embrace the rim portion b for securing the continuous effect previously alluded to. The

canopy is secured in position in the ordinary manner.

A semicircular insulator H, of fiber, is employed to cover the contact plates and springs to avoid the possibility of grounds, such insulator fitting beneath the portion *b* of the rim. The semicircular character of the insulator H permits it to be shifted when access is to be had to said plates and springs, the shifting movement referred to preventing the liability of the insulator becoming permanently displaced.

The adaptability of the improvement for serving as a fixture-tap and receptacle-holder will therefore be readily appreciated.

I do not desire to be understood as limiting myself to the precise details of construction and arrangements of parts shown and described, but reserve the right to all modifications within the scope of my invention.

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

1. In a device of the character described, the combination with a base comprising a body and a sheet-metal rim therefor presenting a forward curved contraction projecting beyond the body, of a facing for said base as a face-plate or canopy having a marginal portion for snugly embracing the rim contraction, and means adapted for rigidly connecting either a lamp-socket or a bracket-arm alternately to said base.

2. In a device of the character described, the combination with a base comprising an insulating-body containing openings in its surface portion, of circuit-contacts carried by said body interiorly with respect to the openings thereof and embodying leaf-springs having their free portions bent; and a plug independent of said base and provided with studs adapted for insertion through the base-openings to engage between the contacts and be embraced by the bent free portions of the leaf-springs.

3. In a device of the character described, the combination with a base comprising an insulating-body containing openings in its surface portion, of circuit-contacts carried by said body interiorly with respect to the openings thereof and embodying leaf-springs having their free portions folded and bent; and a plug independent of said base and provided with studs adapted for insertion through the base-openings to engage between the contacts and be embraced by the bent free portions of the leaf-springs.

4. In a device of the character described, the combination with a base comprising an insulating-body containing openings in its surface portion, of contact-plates and coactive contact leaf-springs carried by said body, said plates and springs interiorly located with respect to the body-openings and conjointly presenting inclined opposite surface portions di-

verging in the direction of the openings, and a plug independent of said base and provided with studs tapering toward their outer ends, said studs adapted for insertion through the openings to engage with the inclined surface portions of the plates and springs.

5. In a device of the character described, the combination with a base comprising an insulating-body containing openings in its surface portion, of contact-plates and coactive contact leaf-springs carried by said body, interiorly located with respect to the openings and conjointly presenting inclined opposite surface portions diverging in the direction of the openings, said leaf-springs having their free portions folded and bent; and a plug independent of said base and provided with headed studs tapering toward their heads said studs adapted for insertion through the openings to engage their tapered parts with the inclined surface portions of the plates and springs and become embraced by the bent free portions of the leaf-springs.

6. In a device of the character described, the combination with a base comprising an insulating-body and a rim both containing registering openings, said rim being connected to said body to maintain the openings in registration and having a forward contraction projecting beyond the body, of a facing for the base and having a marginal part for snugly embracing the rim contraction, means for connecting a translating device to the base, circuit-contacts carried by the base interiorly with respect to the openings thereof; and a plug independent of said base and provided with studs for insertion through the openings to engage with the contacts.

7. In a device of the character described, the combination with a base comprising an insulating-body containing interiorly-located recesses and openings, the latter in its surface portion and intersecting said recesses, of plates in the recesses and adapted for connection with the line-wires, said plates also having ears at an angle to the plates and adapted for connection with the fixture-wires, a facing detachably secured to the base and masking its recesses, means for connecting a translating device to the base; and a plug independent of said base and provided with studs for insertion through its openings to contact with the plates.

8. In a device of the character described, the combination with a base comprising an insulating-body containing interiorly-located recesses and openings, the latter in its surface portion and intersecting the recesses, and a rim having a forward contraction projecting beyond the body, said rim secured to the body and containing openings maintaining registration with those of the body, of plates in the recesses and adapted for connection with the line-wires, said plates also having ears at an angle to the plates and adapted for

connection with the fixture-wires, a facing for the base, masking the recess in said base and having a marginal part snugly embracing the rim contraction, means for connecting a translating device to the base; and a plug independent of said base and provided with studs for insertion through its openings to contact with the plates.

9. In a device of the character described, the combination with circuit-contacts, of a plug comprising a block of insulating material, studs with threaded shanks screwed therein and having tapering projecting portions of larger diameter at their points of junction with the shanks than the diameters of said shanks, companion nuts on said studs, and wires clamped between said nuts.

10. In a device of the character described, the combination with circuit-contacts, of a plug comprising a block of insulating material, studs carried by said block, wires con-

nected to said studs, and a fiber lining incasing said block and having a perforated end through which the studs project.

11. In a device of the character described, the combination with circuit-contacts, of a plug comprising a block of insulating material, studs carried by said block, a fiber lining incasing said block and having a perforated end through which said studs project, a metal shell embracing said lining and block and having a hard-rubber bushing in its end, and wires extending through said bushing, shell and block and connected to the studs.

Signed at New York, in the county of New York and State of New York, this 9th day of May, A. D. 1904.

CHARLES S. RYERSON.

Witnesses:

CHAS. L. WOLF,
M. BENDER.