

(No Model.)

S. BERGMANN.
ELECTRICAL CHANDELIER.

No. 263,103.

Patented Aug. 22, 1882.

Fig 2.

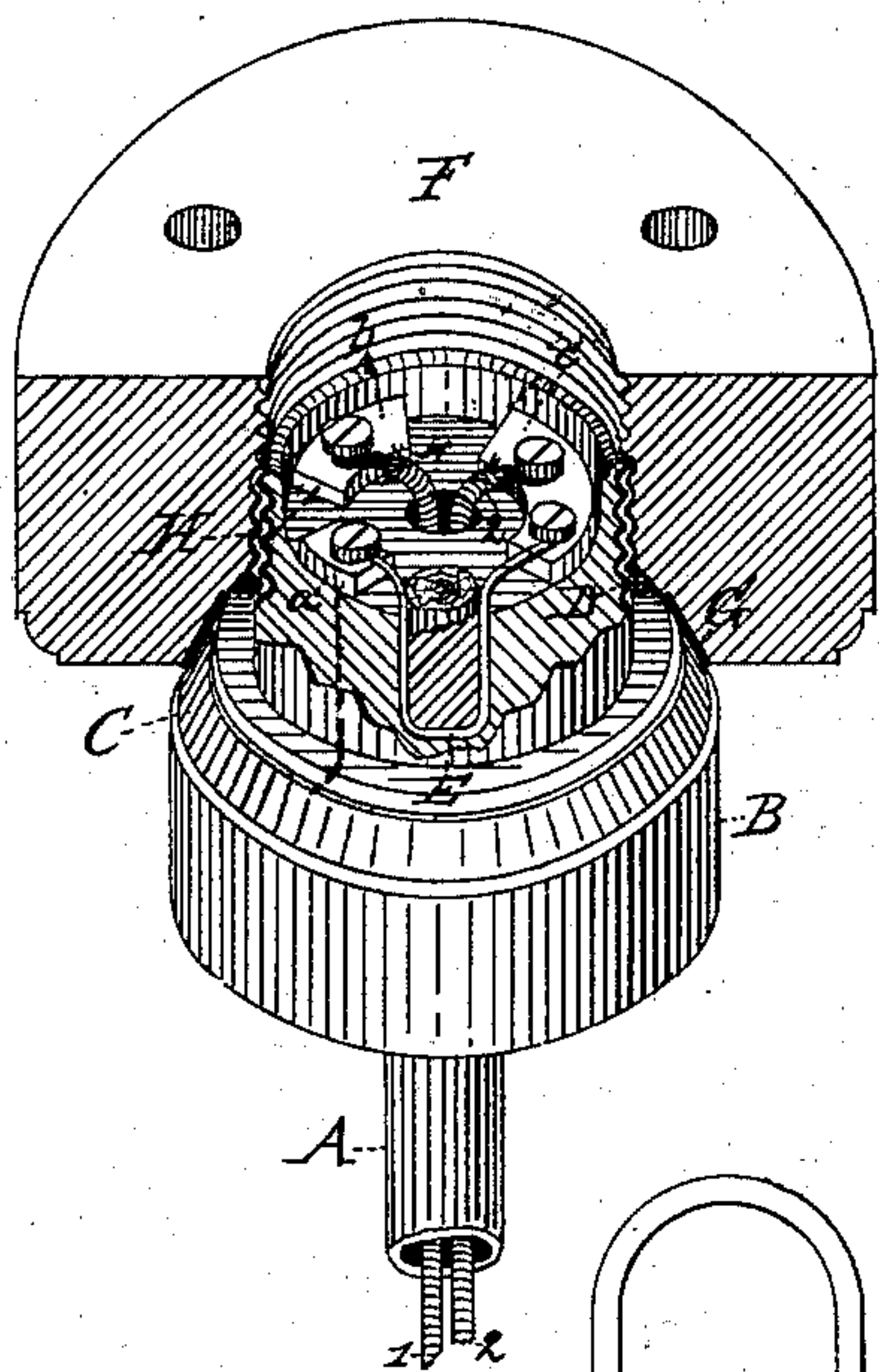


Fig. 1.

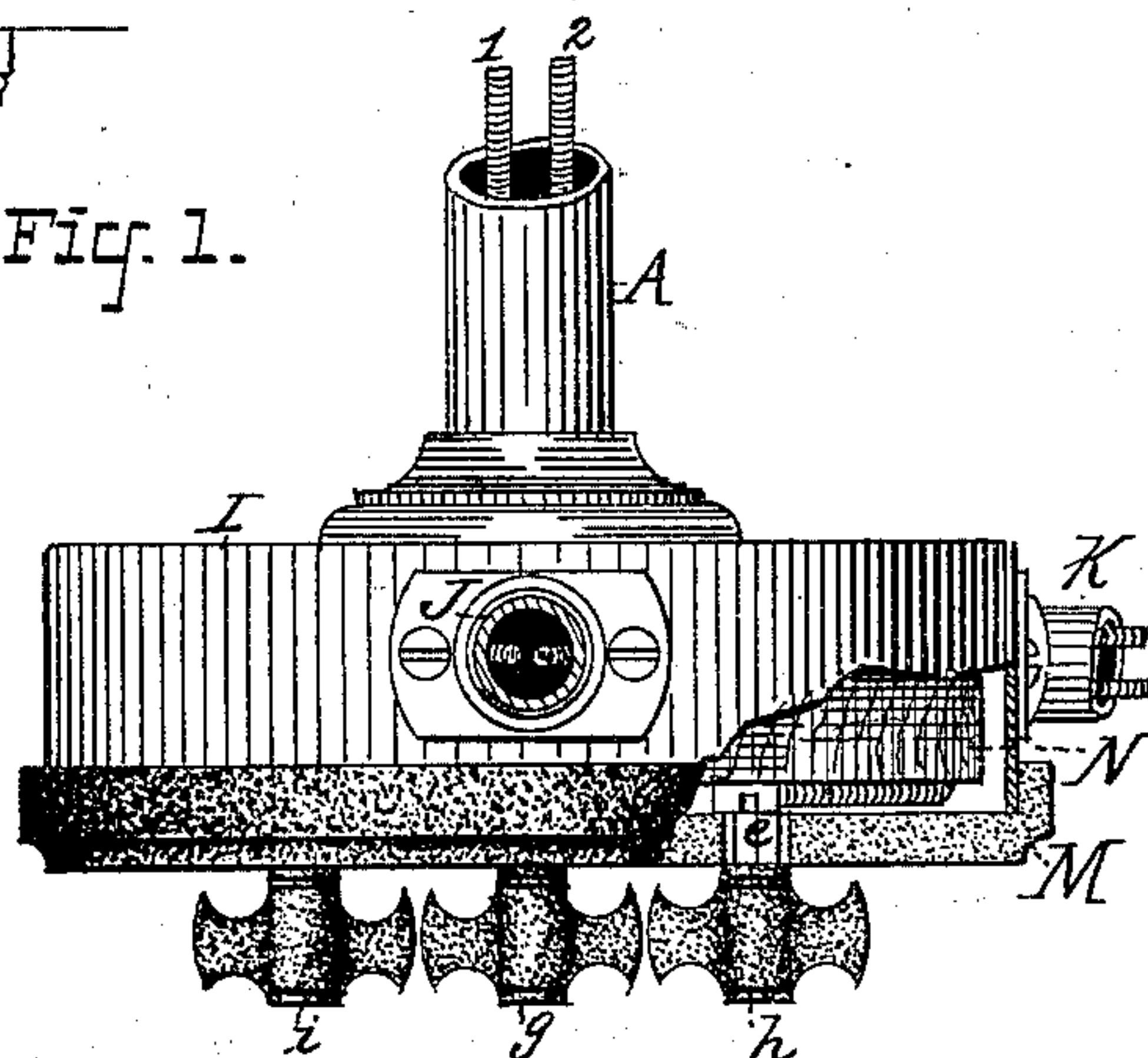


Fig. 5.

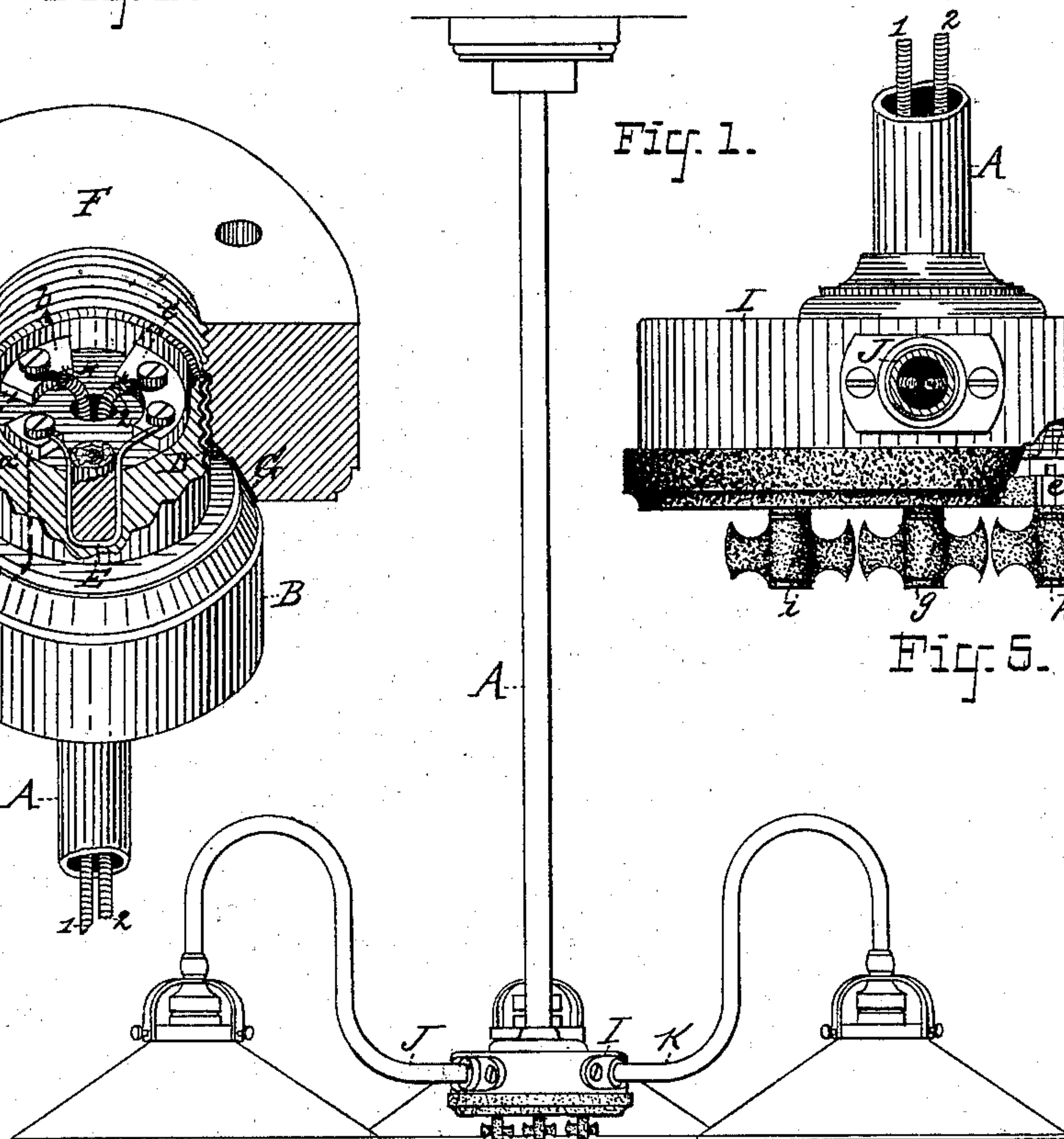
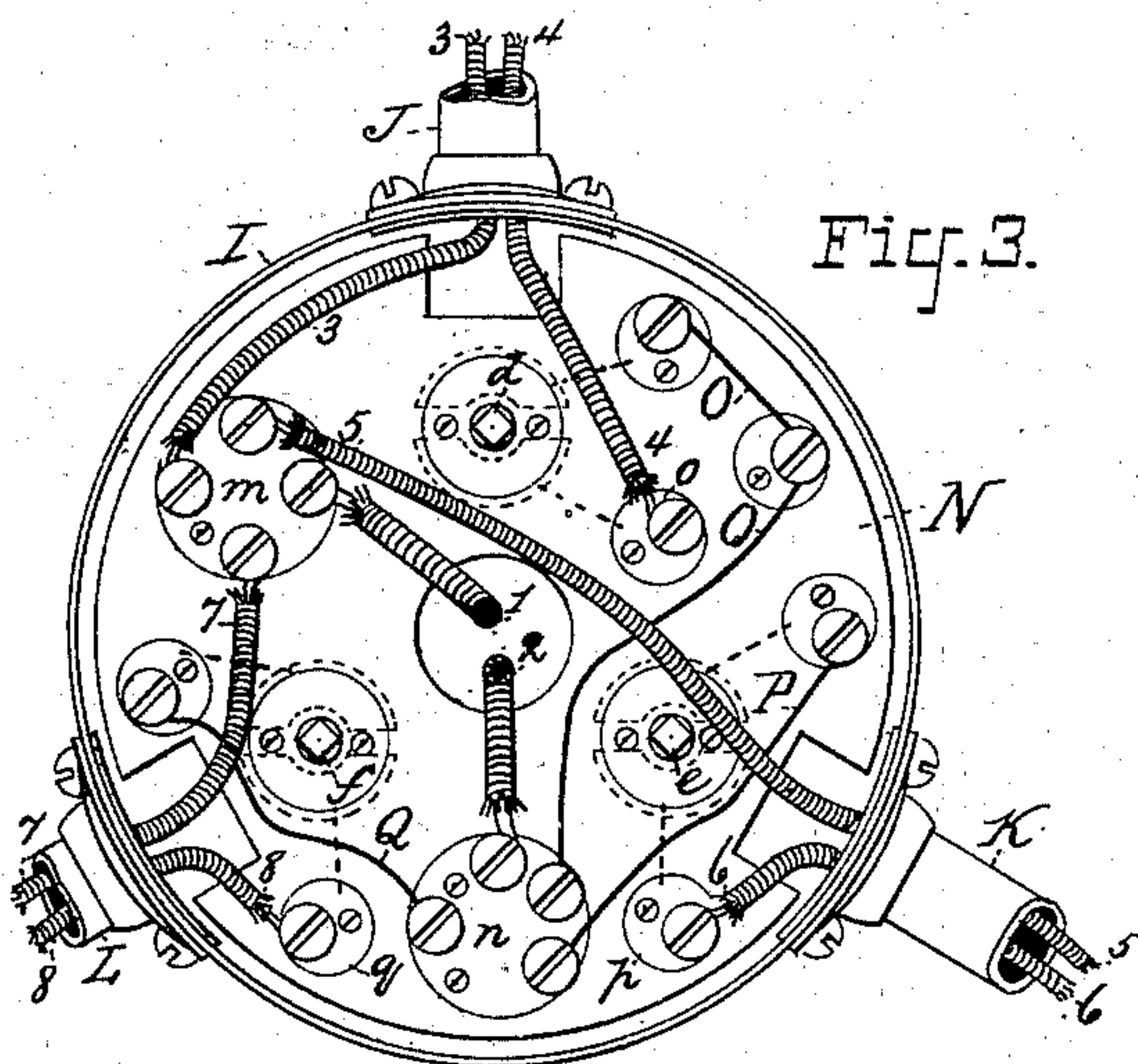
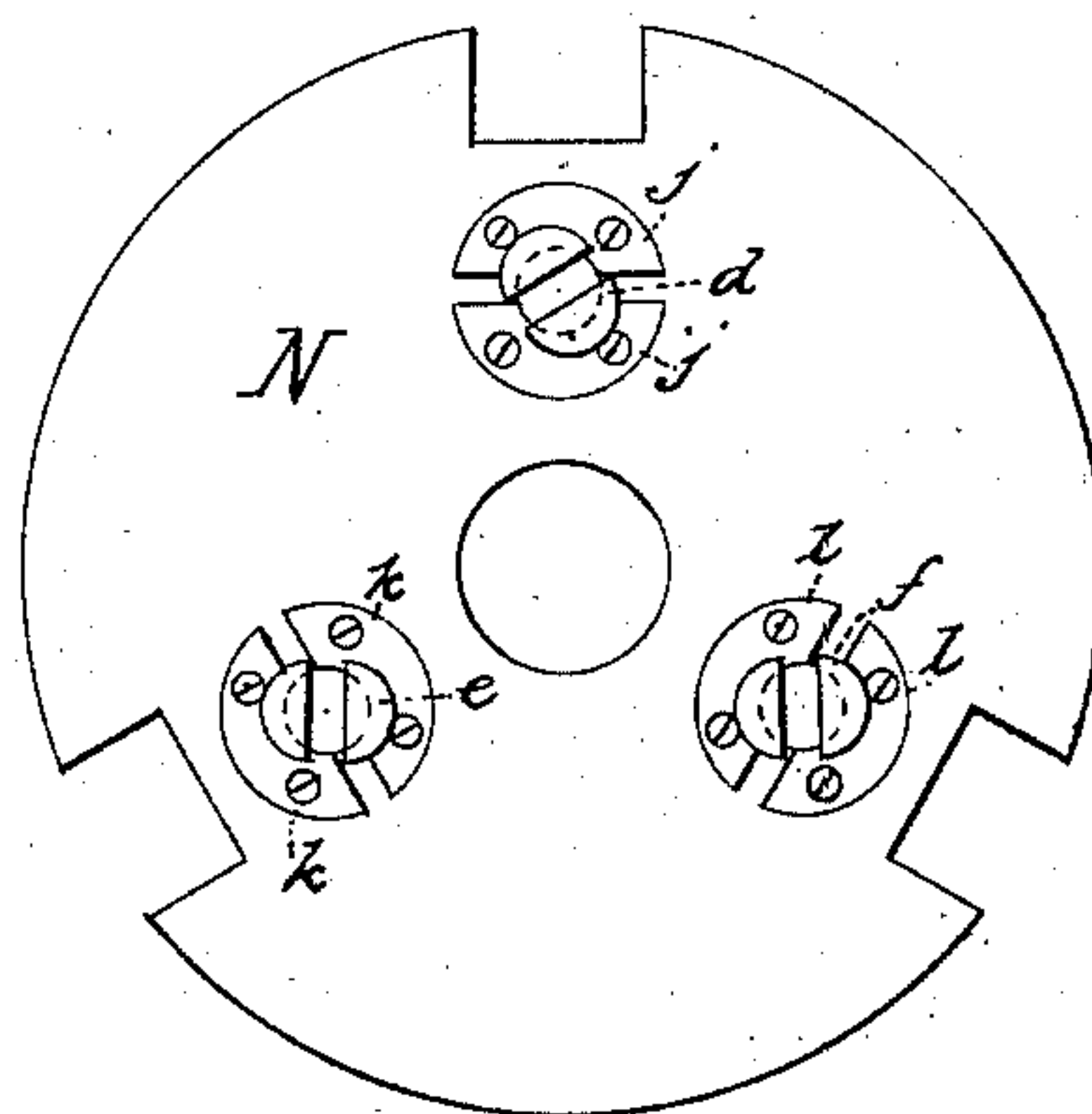


Fig. 4.



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ELECTRICAL CHANDELIER.

SPECIFICATION forming part of Letters Patent No. 263,103, dated August 22, 1882.

Application filed February 25, 1882. (No model.)

To all whom it may concern:

Be it known that I, SIGMUND BERGMANN, of the city, county, and State of New York, have invented a certain new and useful Improvement in Electrical Chandeliers, of which the following is a specification.

The object I have in view is to produce a simple and efficient arrangement and construction of the parts of an electrical chandelier, whereby it can be readily secured in position, concealing the connections, and will not require a person of experience to connect the conductors in the ceiling with the wires of the chandelier. The connections within the chandelier and the "safety-catches" for the individual lamps will be conveniently accessible for inspection or renewal. The circuit controllers or controller will also be conveniently located for ready manipulation, and the cost of construction will be reduced to the minimum without the sacrifice of durability or efficiency.

In the accompanying drawings, which show a chandelier embodying my invention, Figure 1 is an elevation of the chandelier; Fig. 2, a sectional perspective view of the ceiling-block and upper end of chandelier-stem; Fig. 3, a bottom view of the central box of chandelier, with cover removed to show the central block and the connections; Fig. 4, a view of the upper side of the central block removed from the box; and Fig. 5, a side elevation of the central box, with parts of the box and cover broken away.

A is the stem of the chandelier, through which pass the insulated wires 1 2, forming the main wires of the chandelier. This stem is preferably of metal, and is secured at its upper end to a head, B, of insulating material, preferably wood. This head has a cylindrical form, which is reduced to a smaller cylinder at its upper end. The shoulder at the junction of the two cylinders composing the head is beveled, and has laid upon and secured to its surface a plain metal band or ring, C. The smaller cylinder has secured to it a metal screw-ring, D. The upper end of the head B is hollowed out, and in the chamber thus formed are placed metal plates *a b c*. The main chandelier-wires 1 2 are secured to the plates *b c*, while the plates *a* and

care connected by a safety-catch wire, E, which, to give it sufficient length, is bent down into a hole bored in the head and held therein by a plug of insulating material, as shown. Plate *a* is connected electrically with the plain ring C and plate *b* with the screw-ring D, as shown diagrammatically by the dotted lines in Fig. 2.

F is a block of insulating material, preferably wood, which is secured to the ceiling. This ceiling-block has a hole bored through it, and has a flared or beveled portion at the lower end of the opening. Secured to the ceiling-block F upon this beveled surface is a plain metal band or ring, G, and within the opening is a metal screw ring or band, H, which rings G and H engage with and receive within them the rings C D of the head B. The ceiling-block has two binding-screws, (not shown,) which are connected electrically with the rings G H, and to which the conductors within or upon the ceiling are secured when such block is attached to the ceiling. When the wires are run throughout the house the ceiling-blocks may be secured in position and connected properly with such wires, and the chandeliers, properly wired, may, when desired, be attached by any person by simply turning the head into the ceiling-block, the mere act of mechanically securing the chandelier to the ceiling-block making the necessary electrical connections. It is only necessary to turn the chandelier axially to effect the mechanical attachment of the chandelier to the ceiling and the electrical connection of the conductors, which can be readily done from the lower end of the chandelier, the movement being an easy and positive one.

When the parts are in position the circuit is complete from one ceiling-conductor through the plain rings and the safety-catch E to wire 2 and from the other ceiling-conductor through the screw-rings to wire 1, the connections being concealed within the ceiling-block. The current for the whole chandelier flows through the safety-catch E, and this safety-catch protects the parts from injury by reason of a cross occurring in the wires 1 2 or their connections between the head B and the safety-catches for the separate lamps.

I may substitute for the plain ring D on the

head B a projecting metal tip, which may engage with a plate secured within the opening of the ceiling-block; or other changes in the form and arrangement of the contacts may be made; but I prefer the construction shown in the drawings, for the reason that the chandelier is held thereby rigidly in position against lateral movement.

To the lower end of the stem A, centrally at the bottom of the chandelier, is secured the central box, I, from which project the lamp-arms J K L. The central box is preferably of metal, and so are the lamp-arms. This box is also preferably round, and has its bottom closed by a removable cover, M, of insulating material, preferably hard rubber. This cover has a flanged edge, which fits tightly over the sides of the box and holds the cover in place by friction while permitting of its ready removal. The circuit-controlling rods *d e f*, carrying the finger-keys *g h i*, project through this cover, and may touch the same without being electrically connected. This insulating-cover gives convenient access to the connections within the central box. Such connections are made on the lower side of a block, N, and may come into contact with the cover M, which, being of insulating material, does not establish a short circuit. The block N is preferably of wood and fills the box I. It carries the circuit-controllers, one for each lamp-arm. These circuit-controllers are rods *d e f*, partly split, and having beveled heads working through sets of contact-plates *j k l*, (two plates for each rod,) such rods being forced into contact with the plates by spiral slots and pins, which act upon the turning of the rods, and being thrown out of contact with the plates by springs. These circuit-controllers are the same as that described in Patent No. 251,596, granted December 27, 1881, to Edward H. Johnson, and for that reason it is not thought necessary to illustrate them more fully. The main chandelier-wires 1 2 pass down through the center of the block N, and are secured to metal plates *m n*, attached to the lower side of N. From these two plates *m n* the wires for the branch or multiple-arc circuits of the lamp-arms all run to the lamp-sockets on the ends of such arms, each branch circuit including a safety-catch and controller.

The wires of the lamp-arms J K L are numbered respectively 3 and 4, 5 and 6, and 7 and 8. Wires 3, 5, and 7 run directly from the arms to plate *m*. Wires 4, 6, and 8 run from the arms to intermediate plates, *o p q*, which are connected with the safety-catch wires O P Q through the contact plates and rods of the circuit-controllers, as shown in dotted lines in Fig. 3. The safety-catch wires O P Q run directly themselves to or are connected directly,

by ordinary copper wire, with the plate *n*. The safety-catches O P Q give protection against crosses in the separate lamp-arms and lamp-sockets, and when used the lamp-sockets are made without safety-catches.

The advantages of having the connections, separate safety-catches, and the circuit-controllers located centrally at the bottom of the chandelier will be readily appreciated by those skilled in the art. The construction is more economical than that heretofore employed, and the parts can be reached more conveniently for inspection or repair. The finger-keys for separating the circuit-controllers can also be more readily manipulated.

A three-arm chandelier is shown; but it is evident that the same features can be employed in a chandelier having only two arms, or in one having four or more arms. It might in some cases be desirable to have one circuit-controller on the chandelier for turning off and on all the lights simultaneously. This could be accomplished by placing a circuit-controller in the line of one of the main wires 1 2 before it reaches the branching plate *m* or *n*. This circuit-controller could be employed in addition to or as a substitute for the separate one-lamp circuit-controllers before described.

It is evident that many changes and modifications could be made in details of construction and arrangement of many of the devices hereinbefore described without departing from the spirit of my invention, the particular construction and arrangement of the several parts being considered only as the best and most practicable form.

What I claim is—

1. The combination, with a ceiling-block having plain and screw rings connected with the ceiling-wires, of the stem A of an electrical chandelier having wires 1 2, the head B, of insulating material, attached to the upper end of such stem, and provided with plain and screw rings C D, the chamber in the top of said head containing the binding-plates *a b c* and safety-catch E, such parts being accessible from the top of the chandelier, and being hidden when the head is turned into the ceiling-block, substantially as described and shown.

2. In an electrical chandelier, the combination, with the central box or case inclosing the connections, of a removable cover of insulating material, through which the stems of the circuit-controllers pass, substantially as set forth.

This specification signed and witnessed this 20th day of February, 1882.

SIGMUND BERGMANN.

Witnesses:

WM. H. MEADOWCROFT,
H. W. SEELY.