(No Model.) 2 Sheets—Sheet 1.

T. A. EDISON.

ELECTRIC CHANDELIER.

No. 251,553. Patented Dec. 27, 1881.

Fig. 1.

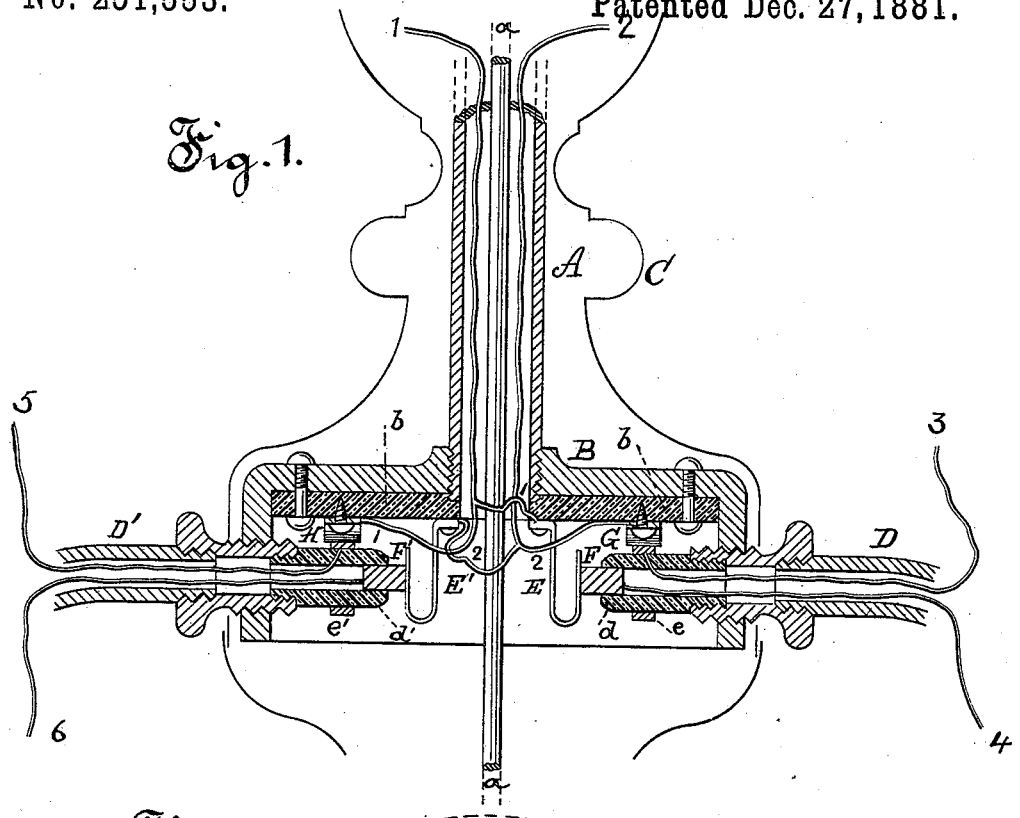
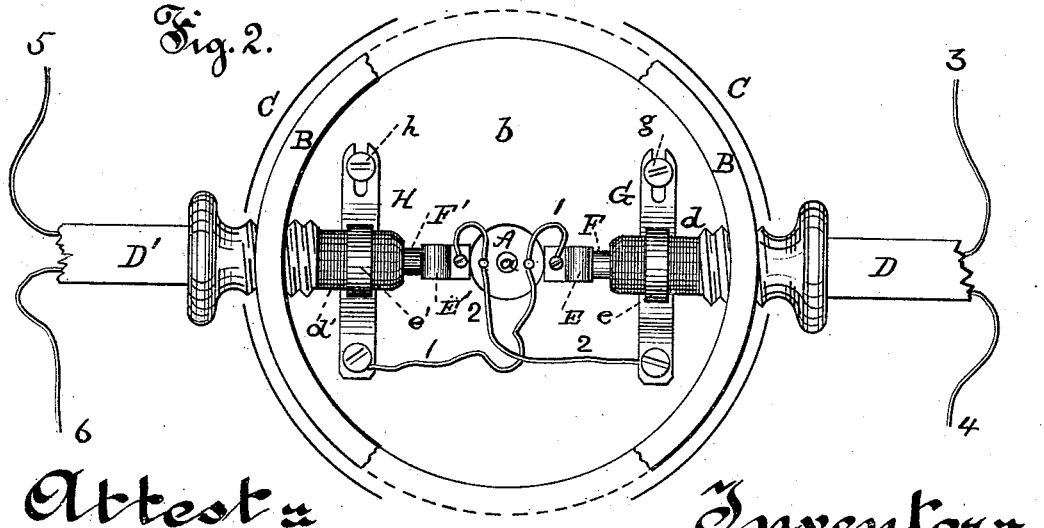


Fig. 2.



Attest:

D. D. Mott

H. W. Seely

per

Inventor:

T. A. Edison

by his Attys. Wilkes

Attys.

(No Model.) 2 Sheets—Sheet 2.

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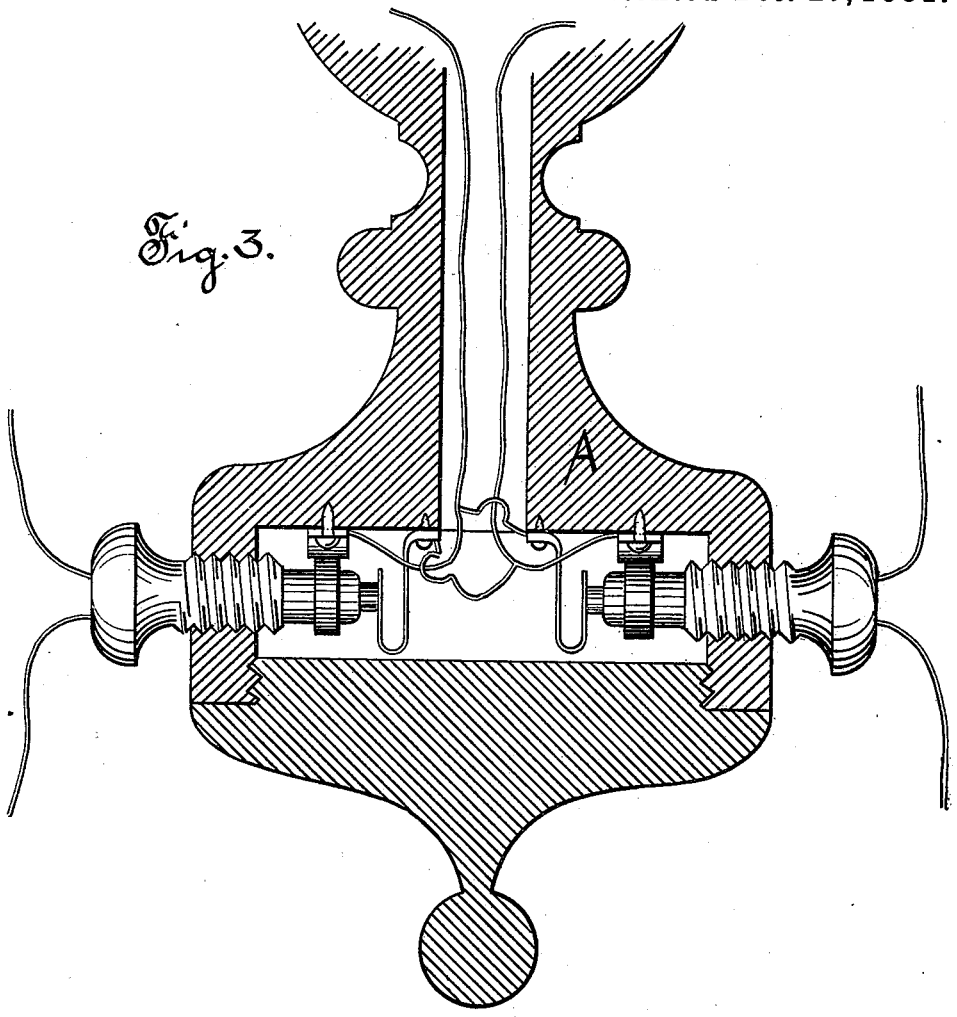
Fig. 3.



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H. W. Seely

per

Inventor:

T. A. Edison
by his Atty. W. Wilber

Attys.

UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF MENLO PARK, NEW JERSEY, ASSIGNOR TO THE EDISON ELECTRIC LIGHT COMPANY, OF NEW YORK, N. Y.

ELECTRIC CHANDELIER.

SPECIFICATION forming part of Letters Patent No. 251,553, dated December 27, 1881.

Application filed March 26, 1881. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, of Menlo Park, in the county of Middlesex and State of New Jersey, have invented a new and useful Electric Chandelier; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

In an electric lighting system using incandescent lamps it is often desirable to group a number of them, two or more, for which purpose a device like the ordinary gas-chandelier is exceedingly useful; and the invention in this case relates to what may be called an "electrical chandelier."

A chandelier consisting of a body and two or more arms, often highly ornamented, is not in good shape for packing and shipment. Hence it has become customary to make the ordinary gas-chandeliers so that they come apart into many pieces, which may be packed securely and compactly for shipment, and then reassembled. Manufactured goods of all classes are so made, and are usually designated in the trade as "knockdown" goods. With gas-chandeliers the task is an easy one, as the "circuit," so to speak, for the fluid is simply a pipe, and it is only necessary to see that the junctions are tightly screwed together. With an electrical chandelier a complete electrical circuit must be made to each lamp or burner.

The object of this invention is to furnish an electrical knockdown chandelier, so arranged with circuit-connections and contacts upon or in its various parts that the act of assembling the parts to form the chandelier shall at the same time complete the necessary electrical connections.

A further object of the invention is to utilize wood or any suitable insulating material capable of economical manipulation and ornamentation in the manufacture of chandeliers and other electric-lamp fixtures.

Suppose that the chandelier is to be of metal or that an ordinary gas-chandelier is to be changed into a knockdown electrical chandelier. The chandelier is composed of three elements—the arms carrying the lamps or burners, of which there may be any desired number; the standard and attached base into which the arms are fastened, and the ornamentation, usually of struck-up metal or ornamental castings, slipped over or fastened upon the standard and arms. Through each arm the two conducting-wires are passed, being either left free at the outer end for attachment to the lamp-socket, or, if the socket is then secured in position, attached thereto. The inner end of the arm is screw-threaded for attachment to the base. Beyond the screw-threaded end extends an insulating block or tube terminating in a metal tip, to which one of the conductors is fastened. Upon the exterior of the block is a metal ring, to which the other conductor is led. Within the base attached to the pendant or standard of the chandelier is fixed a block of insulating material serving as a base for the parts to be therein placed; or they may be insulated from each other by a special insulation to each. Near to the location of each arm, and in such position within the base that the metal tip and ring shall impinge thereon when the arm is put in position, are two springs. One is somewhat J-shaped, with its longer member bent at right angles, forming a shoulder by which it is fastened to and depends from the base, its free or spring member being toward the periphery of the base. The other is a curved or bowed spring of sheet metal, rigidly fixed at one end to the base, and secured at the other by a screw passing through a slot, so that it may be more or less bowed. The main conductors pass down through the standard of the chandelier to the base, at which point they branch at each arm a branch from one main conductor being connected to the pendent spring, while a branch from the other is connected to the curved spring. When the arm is screwed into place the metal tip upon its end impinges against the pendent spring, while the ring takes upon the curved spring, the resilience of these parts insuring good contact, so that the necessary

circuit-connections are immediately and automatically formed.

I have found that tasteful and inexpensive chandeliers may be made of wood, which may be ornamented with the ordinary metal ornamentations, when desired. Such, however, may be turned or carved so that the ornamentations of the standard and base are integral therewith and the base hollowed out to form a chamber for receiving the circuit-completing devices described.

In the drawings, Figure 1 is a section, and Fig. 2 a bottom view, of a part of a chandelier constructed as a knockdown electrical chandelier; and Fig. 3 shows a wooden chandelier.

A is the standard or leading-tube of the chandelier, through which pass the main conductors 1 2, and which is surrounded by any ornamental casing C or other desired ornamentation. Attached thereto is the base B for the reception and support of the burner or lamp-carrying arms D D′, of which there may be any necessary number. Upon its interior is the insulating-base *b*, to which are attached springs E E′ G H, there being one spring, E, and one spring, G, for each arm. E is made as a pendent spring, secured at one end, with the free end bent upward toward the periphery of the base, while G H are bowed flat springs, rigidly secured at one end, and at the other by slots in which take screws *g h*, so that their height or bow in the center may be varied. To each spring E E′ and G H a branch from a conductor leads, care being taken that the branches leading to the springs E G or E′ H of each set shall be from different main conductors.

The arms are all alike, and the description of one answers for all. The arm D is arranged to be screw-seated in the base, and it carries upon its inner end the insulating-block *d*, at whose end is fixed the metal tip F in contact with one, 4, of the conductors leading through the arm to the lamp. Upon the exterior of the block *d* is secured a metal band or ring, *e*, to which the other conductor, 3, is secured.

The springs E G and the tip F and ring *e* are so arranged relatively to each other that when the arms are put in position the parts shall be as shown in Fig. 1—viz., with F and E in contact and G and *e* in contact, these contacts being rendered firm and reliable by the resilience of the springs E G. In these figures the conductor 1 branches to spring E of one arm, and to spring H in the other, and conductor 2 to spring E′ in one case and spring G in the other. One conductor, however, may branch to all the springs of one type and the other branch to the springs of another type.

One set of springs and one conductor may be used where metal chandeliers are used, the metal of the chandelier and its connected system of pipes being used for the return system, although it is preferable in systems of incandescent lighting to use a complete wire-circuit.

It is evident that many modifications may be made in the form and arrangement of the contact and springs, the feasibility of making a "knockdown" electrical chandelier being here shown. For instance, the tip F may be a lug upon *d* to strike against a shoulder, or G may be a semicircular or circular projection upon the base in which *e* is to take, or F may be a spring. The number of such modifications, evident to an ingenious mind, is almost beyond cataloguing.

In Fig. 3 is shown a chandelier made of wood or other insulating material, in which the standard A is turned or carved into proper shape.

The base B may be a piece separate from or integral with A, and the arms D may be of wood or metal, as desired. The base B being of wood, the insulating-piece *b* can be dispensed with.

The arms D and base and standard may each be made and sold as separate articles of manufacture, so that repairs of any broken or damaged part of the chandelier may be readily made without its removal from its location.

What I claim is—

1. An electrical knockdown chandelier consisting of a stem, a base provided with a set of contact springs or plates for each arm of the chandelier, and arms each provided at its inner end with an insulating-block carrying contact-terminals for the wires of the arm, and adapted to form electrical contact with the proper set of springs or plates when placed in position, substantially as set forth.

2. The combination of a chandelier-arm provided at its inner end with an insulating part upon which are secured metallic plates, blocks, or springs, forming one set of terminals of a wire-circuit within the arm, and a base provided with contact plates or springs with which the plates, blocks, or springs of the arm form electrical contact when the arm is placed in position, substantially as set forth.

3. An electrical chandelier arm provided with conductors therein, an insulated inner end, and circuit-terminals arranged thereon, to which the wires are electrically connected, substantially as set forth.

4. The combination, in an electrical chandelier, of a standard or support, A, carrying a set of conductors, those of one or the main circuit, a base provided with a series of contact plates or springs, one set for each arm, connected in multiple arc to the main circuit, and an arm or arms for carrying the lamps, each provided with conductors, and with an insulated end carrying contact-plates arranged to complete circuit with the proper set of contacts in the base, substantially as set forth.

5. A chandelier-base provided with an insulated plate, and having secured thereon contact plates or springs, as described, each set forming terminals of a derived circuit, substantially as set forth.

6. An electrical knockdown chandelier in which each part intended to be separable is

provided with an insulated portion carrying or supporting contact plates or springs, forming the terminals of its wire conductors, and arranged to complete circuit with its neighboring portion when the two are secured together, substantially as set forth.

7. The combination, in an electrical chandelier, of a wooden body and arms and conducting-wires secured within perforations therein, substantially as set forth.

This specification signed and witnessed this 7th day of March, 1881.

THOS. A. EDISON.

Witnesses:
H. W. SEELY,
S. D. MOTT.