

No. 706,314.

Patented Aug. 5, 1902.

H. GILMORE.

COMPOUND INCANDESCENT ELECTRIC LAMP.

(Application filed Feb. 7, 1901.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

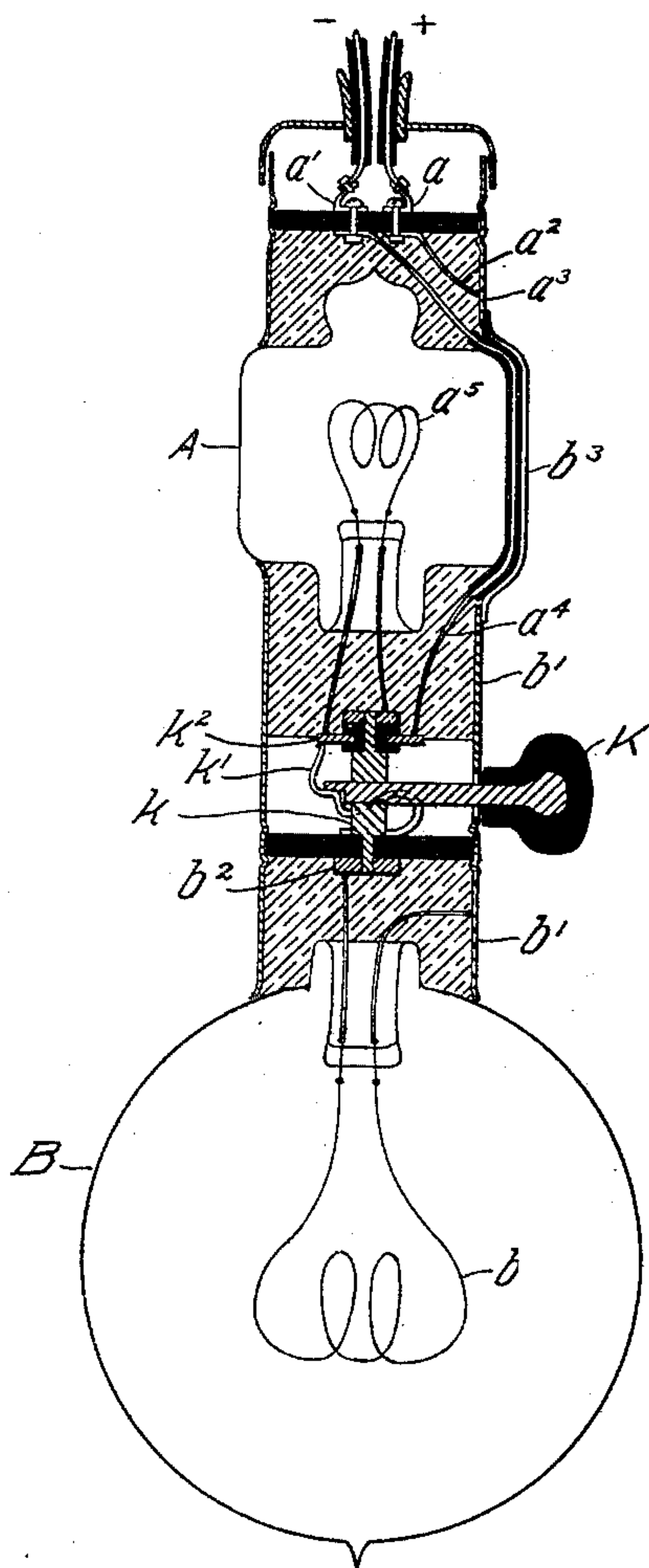
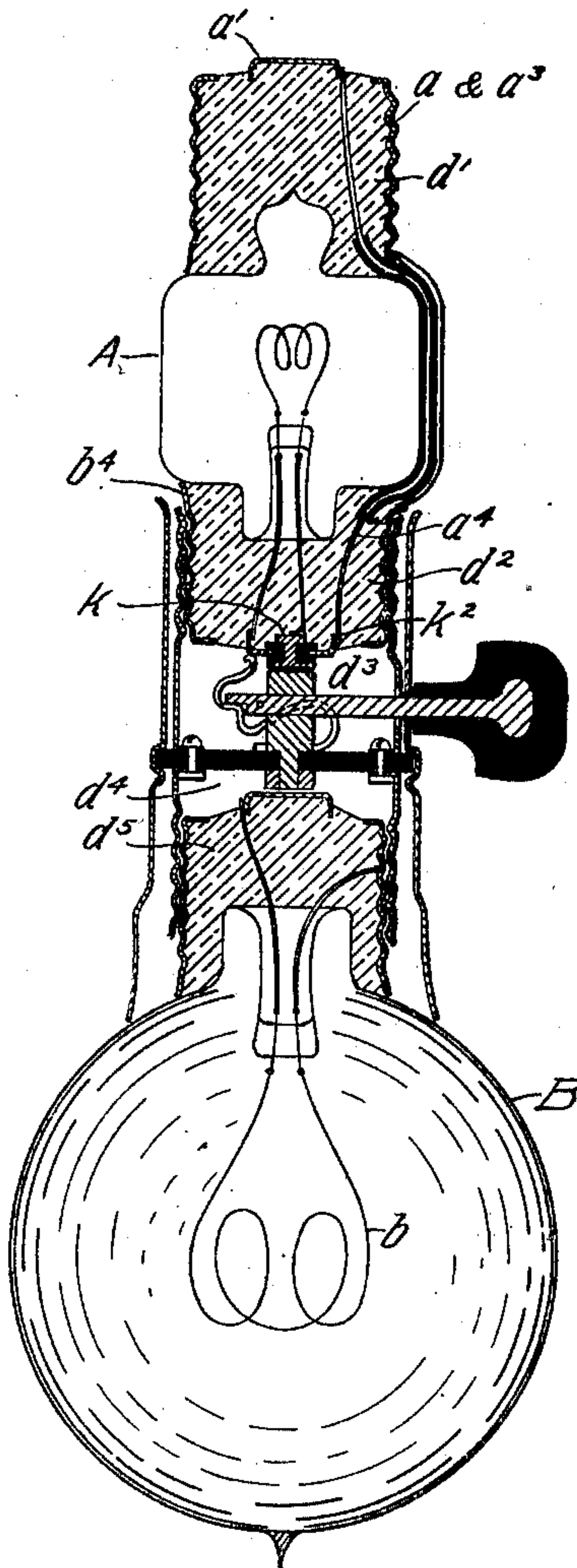


FIG. 2.



WITNESSES

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FIG. 3.

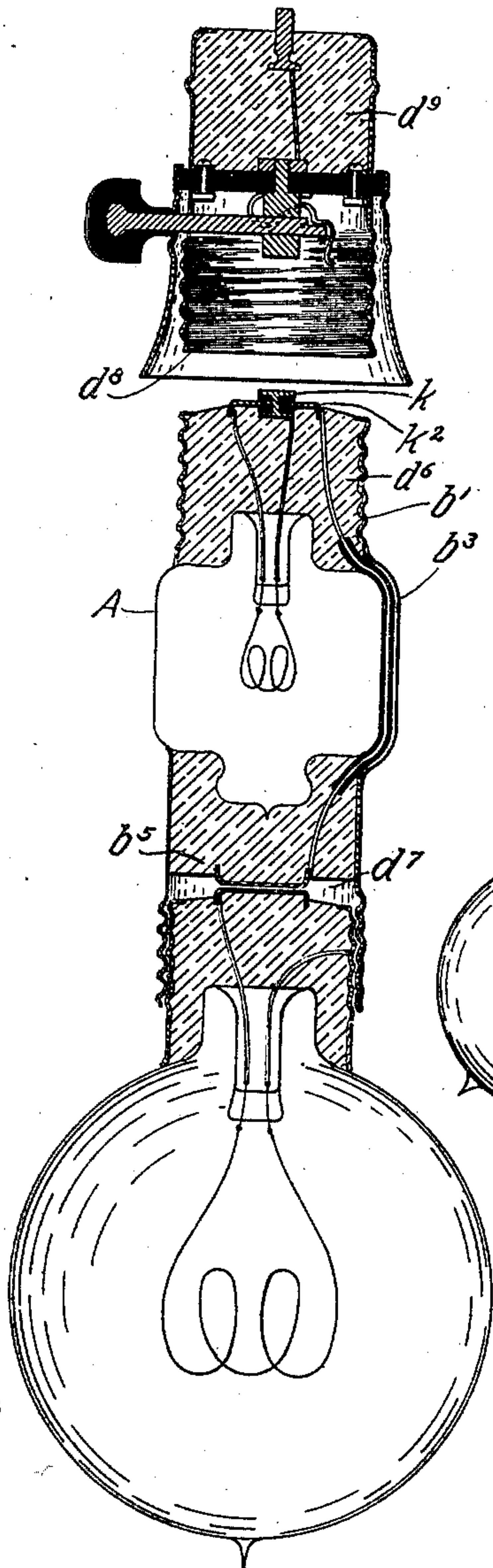
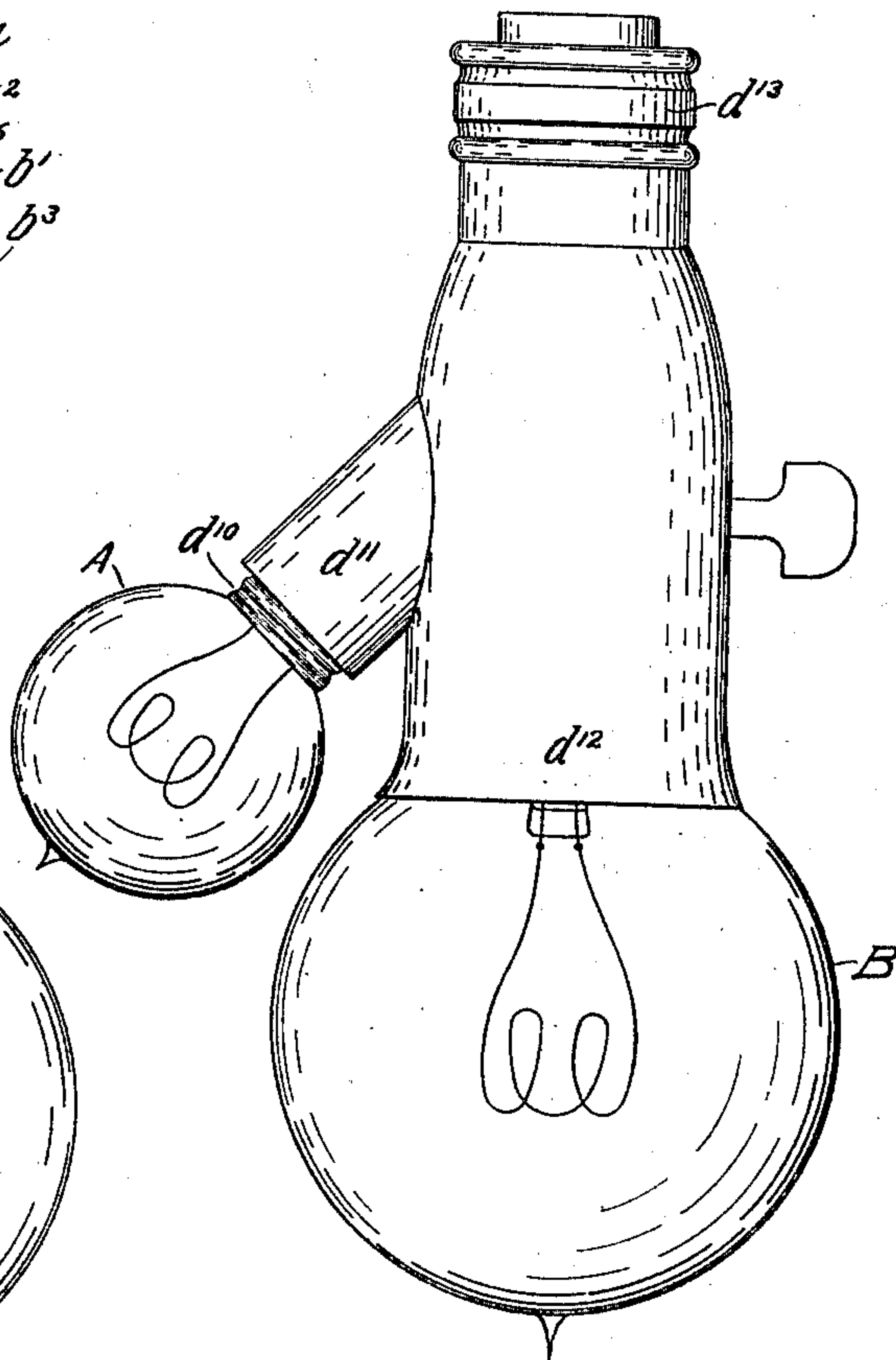


FIG. 4.



WITNESSES

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COMPOUND INCANDESCENT ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 706,314, dated August 5, 1902.

Application filed February 7, 1901. Serial No. 46,413. (No model.)

To all whom it may concern:

Be it known that I, HOWARD GILMORE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Compound Incandescent Electric Lamp, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a diagram showing all the necessary electrical connections and also a switch for short-circuiting or cutting out the low-candle-power lamp. Fig. 2 is a sectional elevation of the proposed form of my lamp. Fig. 3 is a modified form in which the low-candle-power lamp has a base and socket attached to it; but the base is fitted in a separate socket, which is also provided with a base. Fig. 4 is also a modification showing a base with two sockets, one for the low-candle-power lamp, the other for the high-candle-power lamp.

The object of my invention is to provide a compound lamp or two bulbs, each with its own filament so combined that the filaments of both lamps are in series when only the lamp of small candle-power is lighted and the filament of the lamp of low candle-power is shunted or wholly cut out (it is practically immaterial which) when the lamp of higher candle-power is lighted; and my invention is a compound lamp consisting of two lamps, one of low candle-power, the other of higher candle-power, the filament of the low-candle-power lamp being of much smaller diameter than that of the high-candle-power lamp, and means for connecting the high and low candle-power lamps in series and for disconnecting the low-candle-power lamp at will, so that when both lamps are connected in series only the lamp of low candle-power will come to full glow, but when the low-candle-power lamp is shunted or cut out only the lamp of high candle-power will come to full glow. In the best form of my invention each lamp has its own base and socket, and there is a third base and socket, which is common to both lamps, and this combination of two lamps with three bases and three sockets is of practical importance in the practical manufacture of my compound lamp, for although the two lamps may be one structure or may be wholly independent except as to wiring, yet to make my compound lamp in its commercial form it is

practically necessary not only that each lamp shall have its own socket and base, but also that these two sockets and two bases shall have a third base connecting both lamps with the main wires. By this combination the two lamps are connected together so that either can be removed and replaced and both can be attached to and detached from the main lines at pleasure and without disconnecting either from the other.

In Fig. 1, a and a' indicate suitable electrodes, which are connected, respectively, with the main circuit. The conductor a^2 from electrode a is connected to metal shell a^3 , which is fast to the low-candle-power lamp A. The filament b of lamp B is connected at one end to metal shell b' and at its other end to the insulated electrodes b^2 . When the key K is in the position shown in Fig. 1, the circuit is established through conductor a^2 , shells a^3 and b' , (which are connected by strip b^3), filament b of lamp B, electrode b^2 , contacts k' and k^2 , (which are then in contact,) conductor a^4 to electrode a' , and filament b of lamp B is then in full glow, precisely as if the low-candle-power lamp A were not present; but when key K separates contacts k' and k^2 the circuit is established through conductor a^2 , filament b of lamp B, electrode b^2 , screw k , filament a^5 of lamp A, contact k^2 , conductor a^4 to electrode a' , and filaments b and a^5 are then in series, but filament b requires a certain current to bring it to full glow and filament a^5 requires a much smaller current to bring it to full glow, and the current is reduced by bringing filament a^5 in series with filament b to an amperage which causes filament a^5 to glow, but which is insufficient to make filament b glow appreciably. In short, when both lamps A and B are in series lamp A alone is brought to full glow and lamp B is dark or at most at a dull red; but when lamp A is disconnected lamp B of course is at full glow, for then lamp A is practically not present.

In Fig. 2 I show the preferred form of my compound lamp, in which form lamp A is provided with two bases d' and d^2 , one, d' , to fit the usual socket (not shown in Fig. 2) whose electrodes are terminals of the main circuit, and the other, d^2 , to fit the special socket d^3 , which is connected electrically to socket d^4

for base d^3 of lamp B. This form shows lamp A with a base and a separate socket—that is, in Fig. 2 lamp A has two bases d^1 d^2 , made as one piece with it, and two sockets d^3 d^4 , connected as one piece.

In Fig. 3 lamp A is made as one piece with base d^6 and socket d^7 , socket d^8 and base d^9 being made as one piece. In Fig. 4 lamp A is made with base d^{10} , the two sockets d^{11} d^{12} being made as one piece with base d^{13} . This is simply in order that both lamps A and B may be readily detached and either or both be replaced, for in practice lamp A will usually be of much longer life than lamp B, and while the two sockets made as one piece (shown in Fig. 2) connecting lamps A and B are much better than the two sockets made as one piece with a base, (shown in Fig. 4,) mainly because this construction obstructs the light from lamp A, yet it is immaterial whether lamp A be made as in one piece with two bases or two sockets or one base and one socket, for each base must fit its socket, and it is only a question whether the external part called a "socket" or the internal part called a "base" shall be made as in one piece with lamp A, while this feature of my invention is the combination of two lamps by a base and socket for each lamp and a third base and socket connecting both lamps with the main circuit—that is, two lamps connected together by two bases and two sockets and connected as a whole to the main circuit by a third base and socket and provided with a switch which in one position causes the current to flow through both lamps in series and the low-candle-power lamp alone to burn, the high-candle-power lamp thus serving as a rheostat, but when in the other position disconnects or shunts the low-candle-power lamp and causes the high-candle-power lamp to burn.

Lamp A has one set of three contacts and a second set of two contacts, and two of the three contacts are connected with the filament, and one of these two contacts connected with the filament is also connected to one of the set of two contacts. The third contact of the set of three is connected to the other contact of the set of two—that is, in Fig. 1 the set of three contacts are k , k^2 , and b' and the set of two contacts are a and a' . The two

contacts k and k^2 are connected, respectively, to terminals of filament a^5 , and the contact k^2 is also connected to the contact a' of the set of two. The third contact b' of the set of three is connected to the contact a of the set of two—that is, contacts b' , a , and a^3 are connected by strip b^3 and contacts k^2 and a' are connected by wire a^4 . This is an important feature of my invention, for in practice I put lamps A on the market in the form shown in Figs. 2 and 3, which are substantially the same, the sole difference being that in Fig. 2 lamp A is made with the sets of terminals in the form of bases d^1 d^2 , while in Fig. 3 the sets of terminals are made one set in the form of a base d^6 , the other set in the form of a socket d^7 .

In Fig. 2 the set of three contacts are k , k^2 , and the shell b^4 , forming part of base d^2 , and the set of two contacts are a and a' , while in Fig. 3 the set of three contacts are k , k^2 , and the shell b' , and the set of two contacts are the insulated electrode b^5 and the shell-making socket d^7 , which shell is connected with shell b' by strip b^3 .

What I claim as my invention is—

1. In combination two incandescent lamps one with a fine filament the other with a coarser filament and means for passing the current through the lamp with the coarser filament to bring that lamp alone to full glow, and means for passing the current through both lamps in series and so reduce the amperage that only the lamp with the fine filament will be brought to full glow.

2. An incandescent electric lamp comprising a bulb, a filament in that bulb, one set of contacts comprising three contact-pieces and another set of contacts comprising two contact-pieces, with two contact-pieces of the three-piece set connected respectively to the terminals of the filament and one of those two contact-pieces connected also to one contact of the two-piece set; having one contact of the three-piece set and one contact of the two-piece set to be connected respectively with the main wires.

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Witnesses:

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