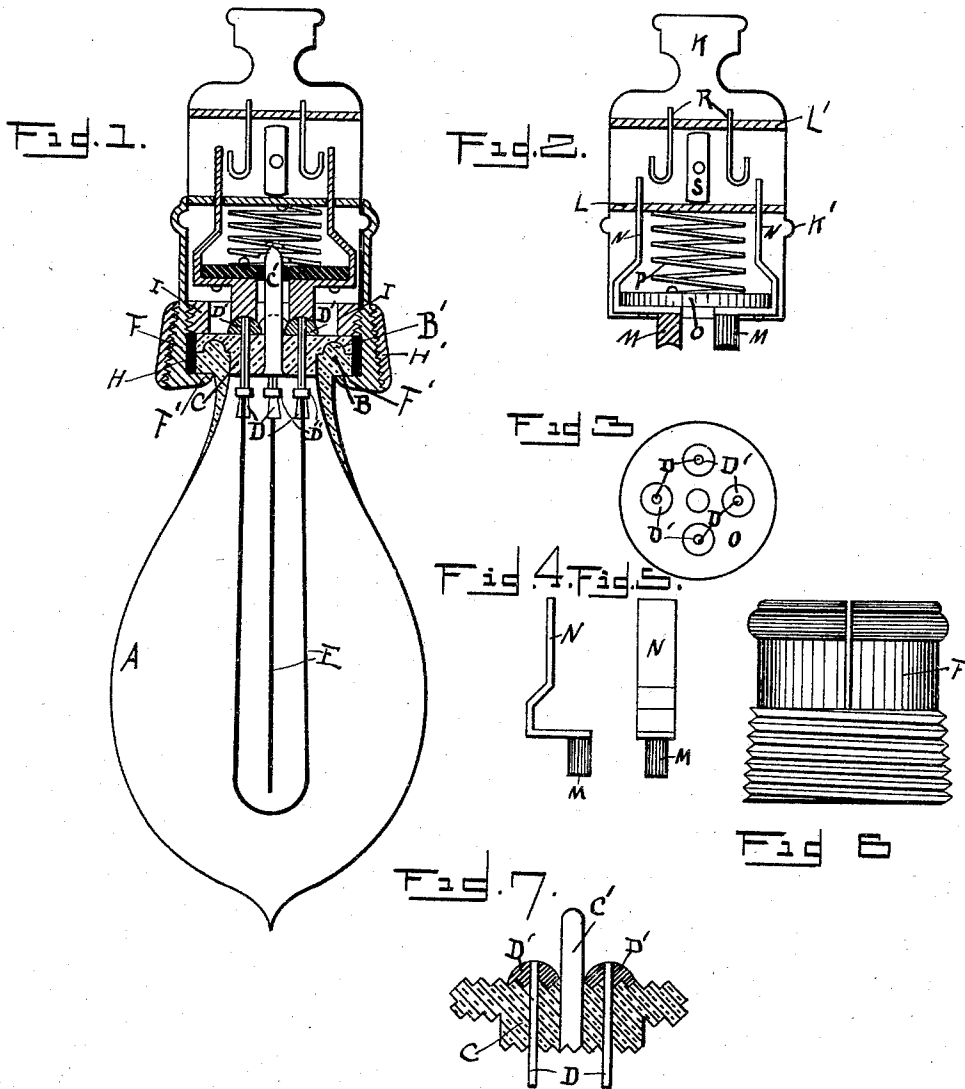


(No Model.)

E. W. APPLGATE.
INCANDESCENT ELECTRIC LAMP.

No. 487,360.

Patented Dec. 6, 1892.



Witnesses
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INCANDESCENT ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 487,360, dated December 6, 1892.

Application filed February 29, 1892. Serial No. 423,307. (No model.)

To all whom it may concern:

Be it known that I, EUGENE W. APPLGATE, of Omaha, in the county of Douglas and State of Nebraska, have invented certain useful
5 Improvements in Incandescent Lamps; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the
10 same, reference being had to the accompanying drawings, which form a part of this specification.

This invention has relation to a new and novel improvement in incandescent lamps.

15 The object of this invention is to provide an incandescent lamp that shall be so constructed that the carbon filaments may be renewed when broken or consumed without sacrificing the glass bulb, as will be described more fully hereinafter.

20 In the accompanying drawings, Figure 1 shows a longitudinal sectional view of a lamp embodying my invention; Fig. 2, a sectional view of the head with the lamp removed.
25 Fig. 3 is a top view of the cap. Figs. 4 and 5 show the connecting-arms; Fig. 6, the spring-collar, and Fig. 7 a broken view of a modification of the bulb-stock.

A represents a pear-shaped glass bulb
30 which is provided with a stem-opening and the flange-stock B. This stock is considerably thicker than the bulb, is circular, and provided on top with a semicircular bead B'. Resting within the stem-opening and upon
35 the top of the bulb-stock B is the cap C, preferably of glass, circular, and provided with a groove adapted to contain the bead B'. This cap is further provided with a central glass
40 tube C', passing through and forming part thereof, and four or more platinum clasps D, fused into the cap and having its upper projecting end threaded and engaged by the copper semispherical nuts D'. The clasps D D',
45 which are in sets of twos, are provided with sliding collars D'' and adapted to clamp the carbon filaments E, as shown. The cap C is adapted to nicely fit into the stem and upon the stock B.

50 F represents a two-part tubular spring-metal sleeve either of sheet or cast metal, each half being provided at the upper end

with an outwardly-extending circumferential groove, at the lower end with an inwardly-extending flange F' and an interior and exterior screw-thread slightly larger than the
55 stock B, which it encompasses, the flange F' clamping the stock below, as shown. Surrounding the stock B is a packing-collar H, of any suitable material to insure a snug and air-tight fit. This two-part sleeve is held
60 upon the lamp-stock by means of the interior threaded stub-sleeve H', encompassing the sleeve F and binding it upon the stock. Upon the interior I provide a collar I, engaging the interior thread of the sleeve F, which works
65 upon the cap C and firmly secures the lamp-stock to the sleeve-flange F'. This arrangement of instrumentalities would embrace a lamp embodying my invention. There would be two sets of carbons within the lamp, both
70 of which could be used at one time, or when one had been consumed the remaining projecting spherical electrodes could be brought within the circuit. When this second carbon
75 had been consumed, they could be replaced by taking the lamp apart, inserting new carbons within the clamps, and reassembling the parts, as has been described. Through this arrangement the bulbs could again be used,
80 so that there would be no loss, probably, but that of the carbon.

The bulbs are exhausted by means of the glass tube C' after they have been made airtight, according to any of the well-known
85 methods.

In Fig. 2 I show more clearly the arrangement of a socket adapted to be used in conjunction with my lamp.

K represents the socket proper, preferably of sheet metal, provided with an outwardly-
90 extending groove K' and upon the interior with the two cross-pieces L L', of any suitable non-conducting material. Working within the lower brace L are the two similar arms M M, of metal, provided with the lower stock N,
95 having a cavity adapted to accommodate the spherical nuts D'. These arms are secured to the disk O, of non-conducting material, which latter is secured to the lower brace L by means of the spring P, so that the arms are
100 insulated and permitted a movement by virtue of the spring P. Fixed within the brace

L' are the two J-shaped spring-arms R R, by means of which the lamp is brought within a circuit. Each arm receives one of the conductors. Pivotaly disposed between these 5 spring-arms is the key S, which when brought into its horizontal position forces the spring-arms R R against the stems M M, and as these are in contact with the carbons when the lamp is in the socket bring the lamp within 10 the circuit.

The sleeve F is detachably secured to the socket K, the spring-actuated arms M M tightly binding upon the nuts D', as shown in Fig. 1. To bring the second carbon into 15 use, it is simply necessary to turn the lamp ninety degrees, so as to bring the remaining nuts in contact with the arms M M.

The device is susceptible of several modifications, and in Fig. 6 I have shown a lamp- 20 stock having an exterior thread blown upon it, as well as being provided with a corrugated cap. If desired, a thin sheet of lead might be placed between this cap and the stock, so as to insure an air-tight connection.

25 Having thus described my said invention, what I claim as new, and desire to secure by United States Letters Patent, is—

1. An incandescent pear-shaped lamp provided with a stem-opening and a flanged stock, 30 the combination of a cap adapted to fit within and upon said opening and stock, said cap being provided with a central tube and four or more projecting threaded carbon clamps, semispherical nuts upon said clamps, carbons 35 removably held within said clamps, an interior and exterior threaded sleeve surrounding said lamp-stock, a stub-sleeve encompassing it, and a threaded collar within said sleeve to secure said sleeve and stock,

all substantially as and for the purpose set 40 forth.

2. An incandescent lamp provided with a stem-opening and a flanged stock, a cap adapted to fit within and upon said stock, provided with a central tube and two or more project- 45 ing clamps of carbon, said cap and lamp forming an air-tight seal, and a threaded spring-sleeve secured to said stock, in combination with a socket comprising the shell K, the spring-actuated contact-arms M M, adapted 50 to be in electrical connection with said carbon clamps, the J-shaped spring-arms, and the key S, all arranged substantially as and for the purpose set forth.

3. In an incandescent lamp of a suitable 55 configuration, provided with a stem-opening and a flanged stock B, the cap C, adapted to fit within and upon said opening and stock and provided with the central tube C', the projecting carbon clamps D, provided with 60 the nuts D', the spring-sleeve F, provided with an outwardly-extending groove at its upper and an inwardly-extending flange at its lower end, the lower portion of said sleeve being further interiorly and exteriorly threaded, 65 the sleeves H', and collar I, in combination with a socket, comprising the shell K, the spring-actuated contact-arms M M, adapted to be in electrical connection with said carbon clamps D D, the J-shaped spring-arms, 70 and the key S, all arranged substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EUGENE W. APPLGATE.

Witnesses:

ARTHUR G. ROSE,
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