

(No Model.)

W. J. McCUTCHEON, Jr.
INCANDESCENT DOUBLE KEY LAMP SOCKET.

No. 461,706.

Patented Oct. 20, 1891.

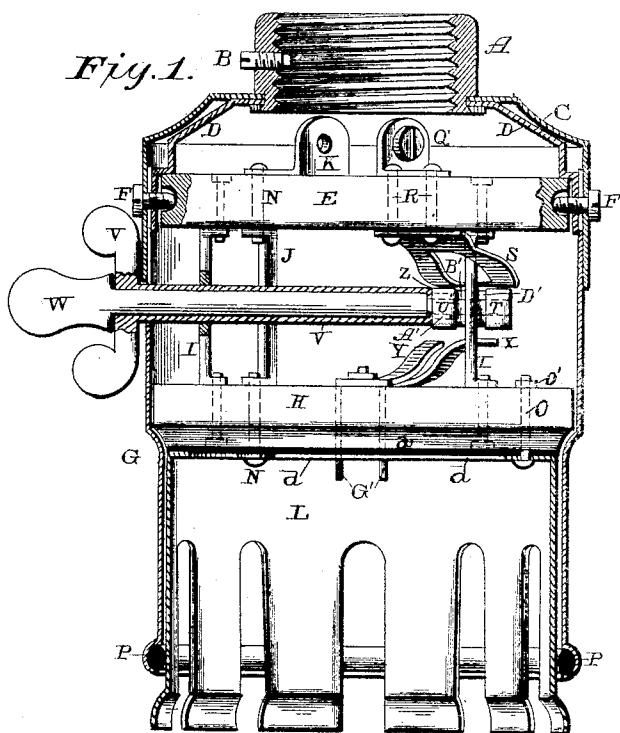


Fig. 2.

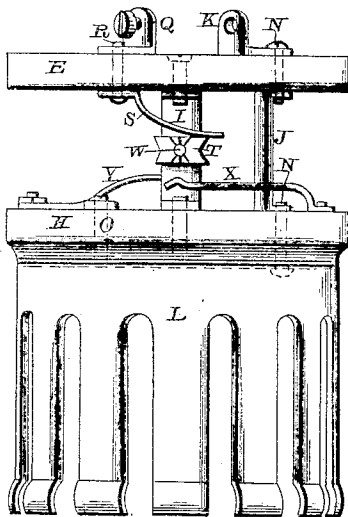


Fig. 9.

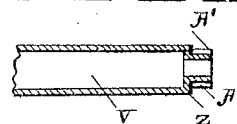


Fig. 3.

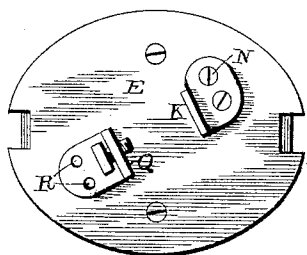


Fig. 7.

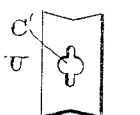


Fig. 4.

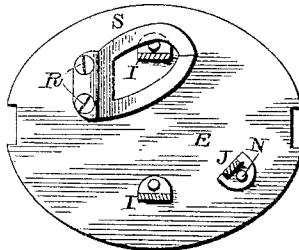


Fig. 5.

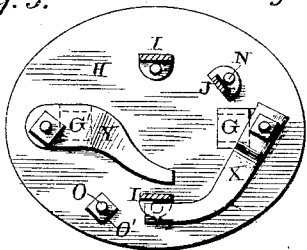


Fig. 10.

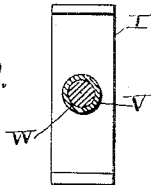


Fig. 6.

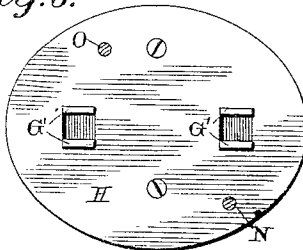
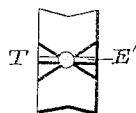


Fig. 8.



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UNITED STATES PATENT OFFICE.

WILLIAM J. McCUTCHEON, JR., OF PITTSBURG, PENNSYLVANIA.

INCANDESCENT DOUBLE-KEY LAMP-SOCKET.

SPECIFICATION forming part of Letters Patent No. 461,706, dated October 20, 1891.

Application filed March 21, 1891. Serial No. 385,854. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JAMES McCUTCHEON, Jr., of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Incandescent Double-Key Lamp-Sockets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in incandescent double-key lamp-sockets; and it consists in the construction and arrangement of parts which will be fully described hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a vertical section of a lamp-socket which embodies my invention. Fig. 2 is a side elevation taken at right angles to Fig. 1. Figs. 3, 4, 5, and 6 are detail views taken from opposite sides of the non-conducting plates to which the operating parts are secured. Figs. 7 and 8 are detail views. Fig. 9 is a longitudinal sectional view of the inner end of the key V. Fig. 10 is a detached view of the left-hand bracket I, the keys which pass through it being shown in section.

A represents a screw-threaded collar or sleeve, by means of which the socket is fastened to a fixture of any kind, and which is provided with a set-screw B for the purpose of locking it in any desired position. On the in or out side of the threaded collar A there is secured a cup-shaped base C, and inside of this base there are two lugs D, which may be conveniently formed upon or secured to a ring which surrounds that portion of the collar that is passed through the cup-shaped base. This collar may be soldered, screwed, tightly clinched, or otherwise fastened into the ring on the inside of the cup-shaped base. The lugs that are formed upon or secured to the ring extend down almost vertically and form shoulders, against which the top edges of the upper plate E bear, and then the ends of the lugs extend down to or nearly to the bottom of the shell C. Between the lugs the upper non-conducting plate E is fastened by

means of the set-screws F, which pass through the upper base C of the inclosing case and the supports D into recesses formed in opposite edges of the plate E to receive them. Shoulders are formed upon the supports or lugs D, so as to fit over the top edges of the plate E, and thus prevent the plate E from being moved beyond this point. The lower portion G of the frame or inclosing case has slots formed through its upper edges where the screws F pass through it, and these slotted upper edges are secured between the lower edges of the base C and the lower ends of the supports or lugs D. The screws F, having large heads, serve to clamp the upper edges of the part G tightly between the base C and supports or lugs D, and thus support the portion G rigidly in position. The outside portion G should have slots for the keys that extend out through the upper end. Whenever it is necessary to have access to the operating parts for any reason, it is only necessary to loosen the screw F and then the portion G can be drawn downward, and the conductors being on top of the upper non-conducting plate the connections are easily made. This construction saves a great deal of time and labor when repairs have to be made or when it is necessary for a workman to have access to any of the parts.

The operating parts of the lamp are secured to the two non-conducting preferably oval-shaped plates E H, which are rigidly secured together by the two brackets I, which also serve as supports or bearings for the two operating-keys and a third bracket or connection J, which serves to connect the upper binding-post K with the shell L by means of the screws N, which extend through the plates E H and through the top edge of the shell L, which is insulated from the lower plate H by means of a sheet of mica or any other suitable non-conducting material *a*, and which socket is cut away or has an opening *d* through its upper end, so as to allow suitable connections to be made between the lamp and the operating parts. The shell L is shaped, as shown at its lower end, with a half-oval bend to fit the projection on the lamp, so that it is only necessary to force the neck of the lamp up into it to secure a good hold, the prongs of the shell allowing plenty of expansion, so as

to insert the neck of the lamp. The upper edge of this shell L is turned inward just sufficient to allow the lower one of the screws N and the one O to pass through it and through the plate H, so as to secure the socket L rigidly in position. The screw O is held in a nut O', set in or on the plate H. This shell is prevented from coming in contact with the lower portion G of the frame, so that no electrical connection can be made between them. The lower edge of the portion G is so shaped as to receive a band or ring of rubber P or any insulating material, so that in case the lower end of the socket is forced outward sufficiently far to come in contact with the part G of the frame the rubber will prevent any part of the current from passing from the socket to the portion of the frame. The screws which serve to secure the brackets and the connection J to the plates E H are passed through the plates into the screw-threaded openings in the brackets for the purpose of preventing any warping or twisting of the parts, as is always liable to occur when the screws are passed through the ends of the brackets, which are turned at right angles for this purpose into the plates E H. Owing to the heat from the lamp, the plates E H become warped and twisted, and unless the screws are passed through the plates into the brackets, as are here shown, the parts are liable to become disconnected and to get out of order.

The second binding-post or connection Q for one of the conductors is secured upon the top of the non-conducting plate E by means of the screw or screws R, which also pass through the elastic plate S, which is preferably shaped as shown, and which plate S is cut away at its center, so as to allow the bracket I to pass through it. This plate S, which is made of light conducting material, extends downward sufficiently far to have the cams T U upon the two keys V W come in contact with it for the purpose of making electrical connection with the spring X Y.

The plate S may be divided at its lower end, so that each of the cams T U will come in contact with a separate part of the lower end of the plate, or it may be made in one circular piece, as desired. Through this plate S a single current is passed from the binding-post Q, and if only one carbon or filament of the lamp is to be used the current is not divided; but if both carbons of the lamp are brought into use for the purpose of introducing a double light the current is divided when the lower end or ends of the plate are brought in contact with the cams T U.

The key V is made tubular, and is provided at its inner end with a shoulder Z, and just beyond this shoulder the key is provided with the two ridges or flanges A', which catch in a correspondingly-shaped opening in the cam U, which is placed thereon. In order to prevent the key V from having any endwise movement and to keep the cam U in position, and

which rests against the shoulder Z on one side, a washer B' is placed near the end of the key and made to bear against the inner side of the right-hand bracket I. The cam U, which is attached to the key V, has an opening C' through its center, which corresponds in shape to the shape of the end of the key, upon which it is loosely placed. The two small recesses extending from the main opening, and which correspond to the flanges A', are made slightly larger than the flanges, so as to allow the key a slight free turning movement in the cam, so that the key can be turned for a small distance before the cam is positively operated. The ends of both of the cams are slightly recessed, so that when they are turned in either direction and made to catch over the upper ends of the spring contact-points X Y the springs serve to hold or lock the cams in position. While one or both of the cams are so turned that the springs are bearing against their lower ends, the plate S is bearing against the upper ends of one or both of the cams and the current is passing through one or both of the cams to its or their respective contact-points X Y. The key W passes through the key V and through the right-hand bracket I, and has placed upon its end a washer D' and the cam T, which has an X-shaped recess formed in its outer side. The washer D' bears against the outer side of the bracket I, and the pin E', that is passed through the end of the key W, serves to prevent the key W coming out. The end of key W may be clinched so as to hold in the X-shaped recess, and by striking against the shoulders of the recess causes the cam to revolve with the key in either direction. Owing to the shape of the recess in the outer side of the cam the key can be turned slightly in either direction before the cam is made to positively turn, and thus form an electrical connection between the plate S and the spring or contact-point X. The springs or contact-points X Y are made pronged and have their two pronged ends to project down through the plate H in the top of the shell L, so that when the neck of the lamp is inserted into the shell the two projections upon the top of the lamp will come in contact with the prongs G', which extend down from the springs, as shown, and which prongs should be so shaped that they will help to hold the lamp in the shell L, which is preferably made of an oval shape. The screw O, which serves to assist in securing the shell to the under side of the plate H, makes no electrical contact with any other part, but holds in a nut in or on top of the plate H.

When only one filament or carbon is to be brought into use, either one of the keys V or W is turned, so as to cause its cam T or U to make connection between the plates S and its corresponding contact-point X or Y. The current passes then from the points G' through the filament or carbon to the shell L, and from the shell through the screws N and the connection J to the binding-post K. If both

of the carbons are to be brought into use for the purpose of giving a double amount of light, both of the keys V W are turned, and then both of the cams make connection between the plate S and the contact-points X Y, and then the currents pass through the projections G' to the carbons and from thence to the shell L, and thence to the binding-post K through the connection J to the screws N. These cams T U should be made of good conducting material.

Only a single thickness of the plate S is here shown; but one or more thickness or thicknesses of metal independent of each other may be used for the purpose of securing greater elasticity with the requisite amount of pressure. It will be noticed that by means of the two plates E H all of the working parts of this double key-socket are thoroughly insulated from the other parts, so that there is no danger of false contacts being made. By the construction here shown the expense and labor of taking the two plates apart, so as to make connection between the wires and conductors, are greatly reduced over the sockets now in use, and it will be seen that the number of parts which the workman is obliged to handle in putting the socket in position is reduced to a minimum. The four projections G', which extend from the contact-points X Y, may be stamped from a single piece of metal with the contact-points and the projections then forced down through openings

in the plate H. I prefer that those portions of the keys V W extending through the slot, as before mentioned, of the shell shall be made of some non-conducting material. All the screws that pass through the plates E H should be so set that their heads should not project beyond the surface of the plates if possible.

There being two filaments or carbons, twice as much light can be produced whenever so desired; but in case it is not desired to use both carbons at once, a lamp can be made to last just double as long as it would where only one carbon is used.

Although the current is here described as passing first through the plate S, it is evident that the current may pass in the reverse direction and operate just as well.

Having thus described my invention, I claim—

In a double incandescent-lamp socket, a frame to receive the lamp, contact-points and conductors for two filaments, and two keys arranged concentrically, each key moving independently of the other and provided with suitable contacts, the parts combined substantially as described.

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

W. J. MCCUTCHEON, JR.

Witnesses:

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MICHAEL DONAVAN.