(No Model.)

F. C. ROCKWELL.

INCANDESCENT LAMP SOCKET.

No. 422,634. Patented Mar. 4, 1890.

Fig. 2

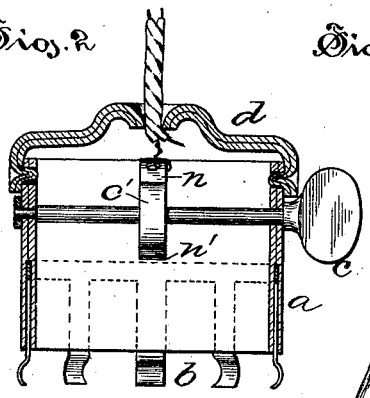


Fig. 1

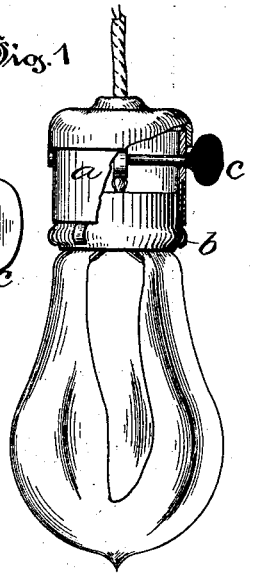


Fig. 3

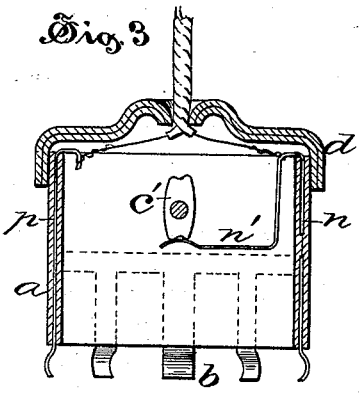


Fig. 4

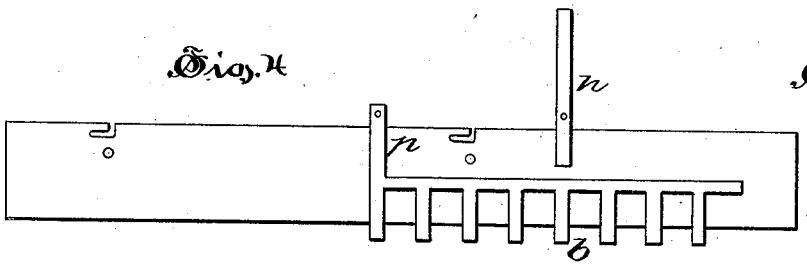


Fig. 5

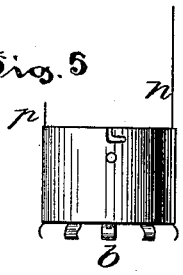


Fig. 7

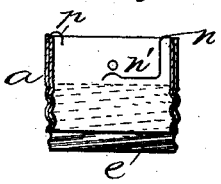


Fig. 6

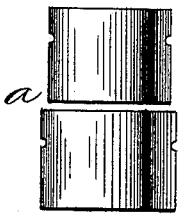
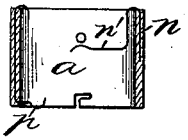


Fig. 8



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UNITED STATES PATENT OFFICE.

FREDERICK C. ROCKWELL, OF HARTFORD, CONNECTICUT.

INCANDESCENT-LAMP SOCKET.

SPECIFICATION forming part of Letters Patent No. 422,634, dated March 4, 1890.

Application filed November 29, 1889. Serial No. 331,937. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK C. ROCKWELL, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Electric-Lamp Sockets, of which the following is a full, clear, and exact specification.

The invention relates to the class of sockets provided for the base of incandescent electric lamps; and the object is to produce a socket which shall be more safe against the possibility of short-circuiting the current through the parts by accidental contact or the accumulation of matter, fewer in its parts, and more cheaply constructed than prior sockets of this class.

Referring to the accompanying drawings, Figure 1 is a side view of one form of an incandescent lamp provided with my improved socket. Fig. 2 is a sectional view, on enlarged scale, of the socket. Fig. 3 is a similar sectional view taken on a plane at right angles to the plane of Fig. 2. Fig. 4 is a plan view of the blank from which the sockets are rolled. Fig. 5 is a side view of the socket after it has been rolled into a cylindrical form. Fig. 6 is a view showing the parts of the body separated. Fig. 7 is a sectional view of the socket adapted to a different form of lamp from that shown in the above figures. Fig. 8 is a sectional view of the socket adapted to a still different form of lamp.

In the views, the letter *a* indicates the body of the socket, which is formed cylindrical of layers of paper, cloth, or a material of similar texture which can be easily rolled to shape and is a non-conductor of electricity, current-conducting leads *p* and *n* being embedded between the layers when the body is formed. This body is either rolled to shape from a continuous strip of material upon which the leads *p* and *n* have been laid at the proper intervals to bring them upon opposite sides of the socket when rolled up between the layers or the body may be rolled from a strip of two layers between which the leads are held by passing the strip between heated rolls pressing together with much force; or the body may be formed of two cylinders of different diameters placed one within the other with the leads between them, these cylinders being subjected to heat and pressure to unite them. The layers of material from which this cylindrical body is formed are cemented together by a suitable binding material, which preferably consists of a composition of a gum, as rubber or shellac, and a hardening or vulcanizing agent, as sulphur, that is rendered strongly adhesive by a suitable amount of heat and pressure, the surfaces of the strips being treated with a coating of the cementing matter before the cylinder is formed.

In adapting the socket for lamps of the pattern wherein the sockets are held to the base by spring-fingers metallic fingers *b* are attached to the strip which is to form the body and rolled between the layers, as is the case with the leads *p* and *n*, so that the ends which grasp the base of the lamp only are exposed. The upper end of the lead *n* is bent inward and downward, forming a spring-arm *n'*, which normally is not in contact with the upward-projecting hub which connects with one of the platinum leads of the lamp, but may be made to make contact with this hub by turning the key *c*, which is supported by the walls of the socket and provided with a cam-block *c'*, usually of insulating material. One of the circuit-wires is joined to this arm near the top of the socket, while the other wire is connected with the upper end of the lead *p*, which is preferably an integral extension of one of the spring-fingers *b*. The cap *d*, having the usual wire-opening, is stamped from layers of paper preferably joined together by a gum cement, the cap having a pair of diametrically-opposite indentations, which enter bayonet-slots in the top of the socket to keep it in place.

If the socket is to be adapted for a lamp wherein the socket is attached to the base by a screw-threaded coupling, as in some patterns, a sheet of metal *e*, provided with a coarse screw-thread, is rolled between the layers of paper in place of the spring-fingers above described.

Instead of having the lead *p* terminate in spring-fingers or a threaded thimble, the end may be bent inward and made to make contact with a ring placed in the top of the base, as in one form of lamp in common use, and the socket secured to the base in the usual

manner in lamps of this pattern. The exterior of the socket is usually coated with a suitably-colored lacquer to give the socket a finish.

The current is taken from one of the circuit-wires by the lead *p* and passed through the spring-fingers or the threaded thimble to the base of the lamp, which is connected with one of the leads to the filament, and after passing through the filament to the lead that rises through the hub in the center of the base is conducted by the lead *n* to the return circuit-wire.

In a socket formed in this manner the leads are perfectly insulated from each other, there are no places where the accumulation of dust or moisture can short-circuit the current, and the body being of insulating material, it cannot become charged, so there is no danger of diverting the current by an accidental connection between the body and a ground.

The socket may be made smaller than those now in use, as there is but little mechanism in the interior, and as it is not necessary to make the walls as thick as when the body is formed of a friable granular composition, the paper giving a fibrous strength and firmly holding the composition with which the layers are bound together, so that it cannot sulphate and crackle under the heat of the currents passing in the vicinity. The composition under the heat and pressure used in formation permeates the pores of the texture of the body and gives it stiffness and rigidity.

The paper exterior of the socket is capable of a high finish, which is not affected by temperature or moisture.

Together with the advantage of security and durability, the expense of the manufacture is greatly lessened, as the paper cylinders, with the inclosed leads, can be rapidly rolled to shape and the caps pressed to shape in the time that was required in forming the insulating-pieces of the prior sockets.

I claim as my invention—

1. A socket for an incandescent electric lamp, consisting of superimposed layers of a thin non-conducting material, with current-conducting leads embedded between the layers, substantially as specified.

2. A socket for an incandescent electric lamp, consisting of layers of a thin non-conducting material wrapped about each other, with current-conducting leads embedded between the wraps, substantially as specified.

3. A socket for an incandescent electric lamp, consisting of layers of a thin non-conducting material wrapped about each other, with current-conducting leads and a coupling for the base embedded between the layers, substantially as specified.

4. A socket for an incandescent electric lamp, consisting of layers of a thin non-conducting material wrapped about each other, with current-conducting leads embedded between the layers, and a key supported by the walls of the socket, bearing a cam-block near the end of one of the leads, substantially as specified.

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