(No Model.)

H. HUBBELL.

SOCKET FOR INCANDESCENT LAMPS.

No. 565,541. Patented Aug. 11, 1896.

Fig. 1.

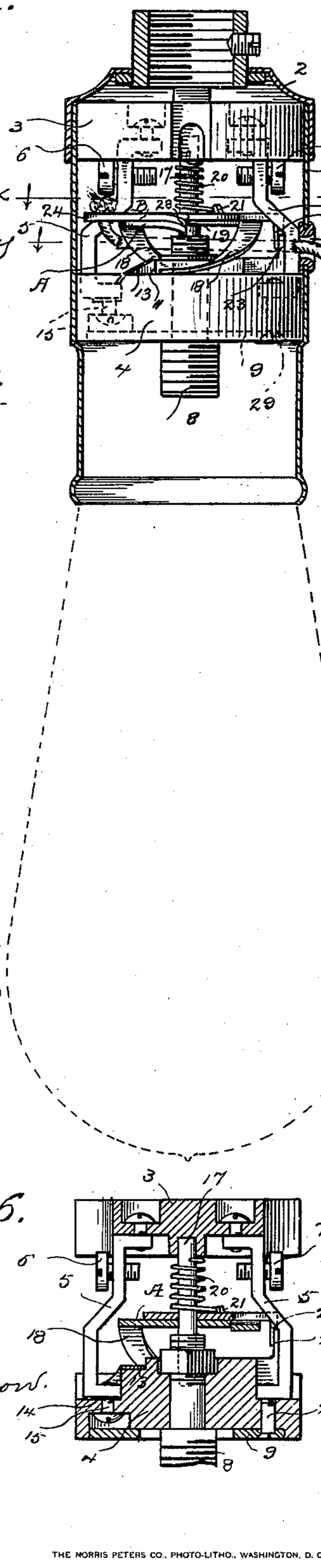

Fig. 2.

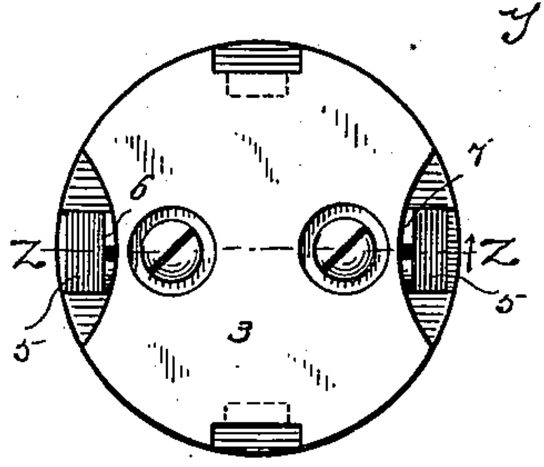

Fig. 3.

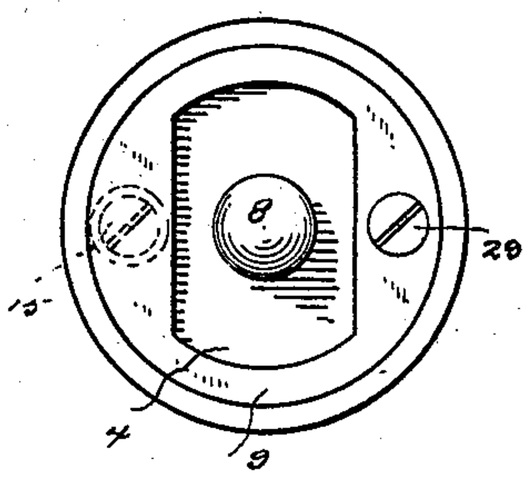

Fig. 4.

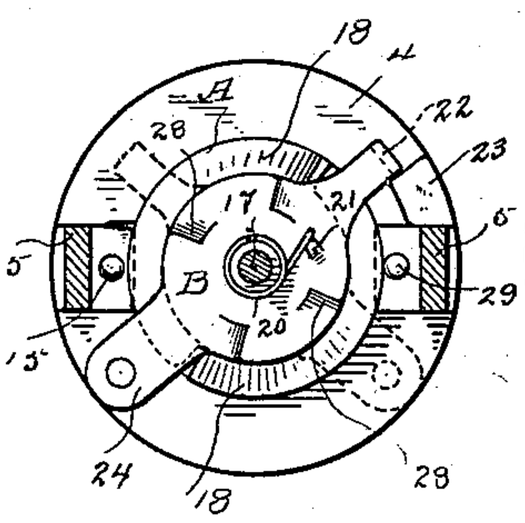

Fig. 5.

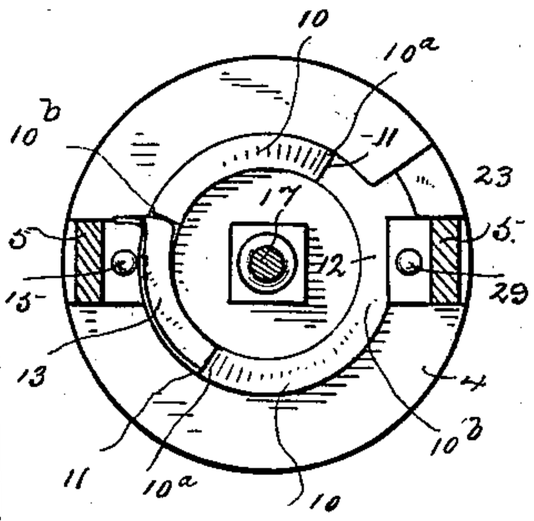

Fig. 6.

WITNESSES

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SOCKET FOR INCANDESCENT LAMPS.

SPECIFICATION forming part of Letters Patent No. 565,541, dated August 11, 1896.

Application filed June 6, 1896. Serial No. 594,489. (No model.)

To all whom it may concern:

Be it known that I, HARVEY HUBBELL, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Pull-Sockets for Incandescent Lamps; 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 appertains to make and use the same.

My invention has for its object to provide a practical and inexpensive pull-socket for incandescent lamps.

With this end in view I have devised the simple and novel construction of which the following description, in connection with the accompanying drawings, is a specification, numbers being used to designate the several parts.

Figure 1 is a view showing the cap and shell in section, the switch in elevation, and an incandescent lamp in dotted lines; Fig. 2, a plan view of the switch detached; Fig. 3, an inverted plan view of the switch detached; Fig. 4, a section of the switch on the line $x\,x$ in Fig. 1, looking down; Fig. 5, a section of the switch on the line $y\,y$ in Fig. 1, looking down; and Fig. 6 is a vertical section of the switch on the line $z\,z$ in Fig. 2.

1 denotes the shell; 2, the cap; 3, the upper insulating-block, and 4 the lower insulating-block, both of which are ordinarily made of porcelain, and 5 standards by which the insulating-blocks are connected.

6 denotes a binding-screw in one of the standards, which I will designate as the "positive" or "incoming" binding-screw, and 7 a binding-screw in the opposite standard, which I will designate as the "negative" or "outgoing" binding-screw.

8 denotes a threaded hub, which is rigidly secured in the lower insulating-block in any suitable manner, as by a nut 16, and to which the lamp is attached, and through which the current passes to the carbon filament, (not shown,) and 9 (see Fig. 3) denotes a plate secured to the under side of the lower insulating-block by a screw 29, which also secures the standard carrying the negative binding-screw to the lower insulating-block. The current passes from the carbon filament to plate 9 and through screw 29 to the standard carrying the negative binding-screw.

I have not illustrated the details of construction of the lamp itself, as they form no portion of my present invention, which relates to the "socket," so called, or more specifically to the socket-switch.

Upon the upper surface of the lower insulating-block I form three inclines 10, two of which terminate in abrupt shoulders 11 and one of which runs out on a raised surface 12, said surface terminating in a shoulder 11. The raised surface is contiguous to the standard which carries the negative binding-screw. Directly opposite to this raised surface and contiguous to the standard carrying the positive binding-screw is a plate 13, which covers one of the inclines, terminating at the upper end of said incline, and is provided with a foot 14, which lies in contact with the base of the standard and is held in place by the screw 15, which secures that standard to the lower insulating-block. (See Figs. 1, 4, and 6.) It should be noted (see Fig. 6) that this screw is not in contact with plate 9, and is therefore not in the circuit.

17 denotes a rod the ends of which are socketed, respectively, in the upper insulating-block and in the upper end of threaded hub 8. (See Fig. 6.)

A denotes a plate, which for convenience I will term the "contact-plate," which turns freely on rod 17. This plate is provided with two downwardly-extending arms 18, which are formed from the metal of the plate itself and are adapted to engage the inclines 10 and raised surface 12 on the lower insulating-block. Plate A is also provided with shoulders 19, which may be formed in any suitable manner. I have shown these shoulders as formed by simply striking out tongues of metal from the plate itself, leaving one end of each tongue attached, so that inclines are formed leading to the shoulders, as clearly shown in Fig. 1. Above the contact-plate is an operating-plate B, which also turns freely on rod 17. This operating-plate is held closely in engagement with the contact-plate by means of a spring 20, one end of which engages the upper insulating-block, the other end engaging lug 21 on the operating-plate and acting to return the operating-plate to

its normal position after each actuation and retain it there, and also to cause each of the arms 18 to drop down into contact with the next incline on the lower insulating-block the instant it passes off at either of the shoulders 11.

The backward movement of the operating-plate is determined by the engagement of a lug 22 on the operating-plate, and ordinarily formed from the metal of the plate itself, with a boss or projection 23, formed upon the lower insulating-block. Opposite to lug 21 on the operating-plate is an arm 24, which may serve in any preferred manner as an operating-arm. I have shown a cord as connected to this arm and extending upward through a hole 26 in the shell and into convenient position to be grasped by the operator, the lower end of the cord being provided with a ball or other pendant for convenience in manipulation.

28 denotes lugs on the under side of the operating-plate which are adapted to engage shoulders 19 on the contact-plate. In practice I form these lugs by striking out tongues of metal from the operating-plate in the same manner that the tongues of metal are struck out from the contact-plate to form shoulders 19.

It will be clearly understood from Fig. 1 that when the cord is pulled the operating-plate will be turned on the rod and through the engagement of lugs 28 with shoulders 19 will carry the contact-plate forward also.

The operation is as follows: The passage of the current will be clearly understood from Fig. 6. Suppose the positive wire to be connected to the left standard, as seen in Fig. 6, by binding-screw 6. The current passes from this standard to plate 13, where it is broken, except when one of the arms 18 of contact-plate A is in engagement therewith. Suppose, now, that the lamp is not lighted and that it is desired to light it. The position of the parts when the lamp is not lighted will be apparent from Fig. 4, in connection with which see Figs. 1 and 6, the position of the parts in all of the figures corresponding. The two arms 18 upon the contact-plate will have just passed off from two of the shoulders 11 and will lie at the bases of two of the inclines, the points at which the arms will engage the inclines being indicated by 10^a in Fig. 5. In other words, both of the arms will be in contact with the lower insulating-block itself and not in contact with any metal, so that the circuit will be broken. To light the lamp, the operator would pull down upon the cord, the effect of which would be to swing arm 24 from the position shown in full lines in Fig. 4 to the position shown in dotted lines and to carry the two spring-arms from the points indicated by 10^a in Fig. 5 to the points indicated by 10^b in said figure. This would place one of the arms 18 in contact with plate 13 and would close the circuit. The other arm would be upon raised surface 12, the effect of which would be to increase the tension of the arm in engagement with plate 13 and would insure a perfect contact of said parts. The instant the circuit is closed the current will pass from plate 13 through rod 17 and hub 8 to the carbon filament, (not shown,) thence to plate 9 and through screw 29 to the standard carrying the negative binding-screw. To break the circuit and put out the lamp, it is simply necessary to pull again upon the cord, the effect of which is to move the parts from the position just described to the position illustrated in the drawings, that is, to a position in which the arms 18 will have moved from the positions indicated by 10^b in Fig. 5 to the positions indicated by 10^a in said figure. One of the arms will have dropped off at the shoulder 11 at the upper end of plate 13 and the other arm will have dropped off at the shoulder at the end of the raised surface. It will be noted that the action of the switch is continuous. When the circuit is broken, a single pull upon the cord closes the circuit and lights the lamp. When the lamp is lighted, a single pull upon the cord breaks the circuit and puts out the lamp.

Having thus described my invention, I claim—

In a device of the character described the combination with an insulating-block having inclines, one of said inclines being provided with a plate 13 which is electrically connected with one of the binding-screws, of a rotatable contact-plate electrically connected with the other binding-screw and having downwardly-extending arms which are adapted to engage the inclines and plate 13, a rotatable operating-plate which is adapted to engage the contact-plate each time it is actuated to move the contact-plate forward and place one of the arms either in contact or out of contact with plate 13 and a spring acting to retain the operating-plate and the contact-plate in operative position and to return the operating-plate to its normal position after each actuation.

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

HARVEY HUBBELL.

Witnesses:

A. M. WOOSTER,

S. V. RICHARDSON.