

No. 843,281

PATENTED FEB. 5, 1907.

C. M. & E. W. KEIER.
LAMP SOCKET FOR INCANDESCENT LAMPS.
APPLICATION FILED JULY 11, 1904.

Fig 1

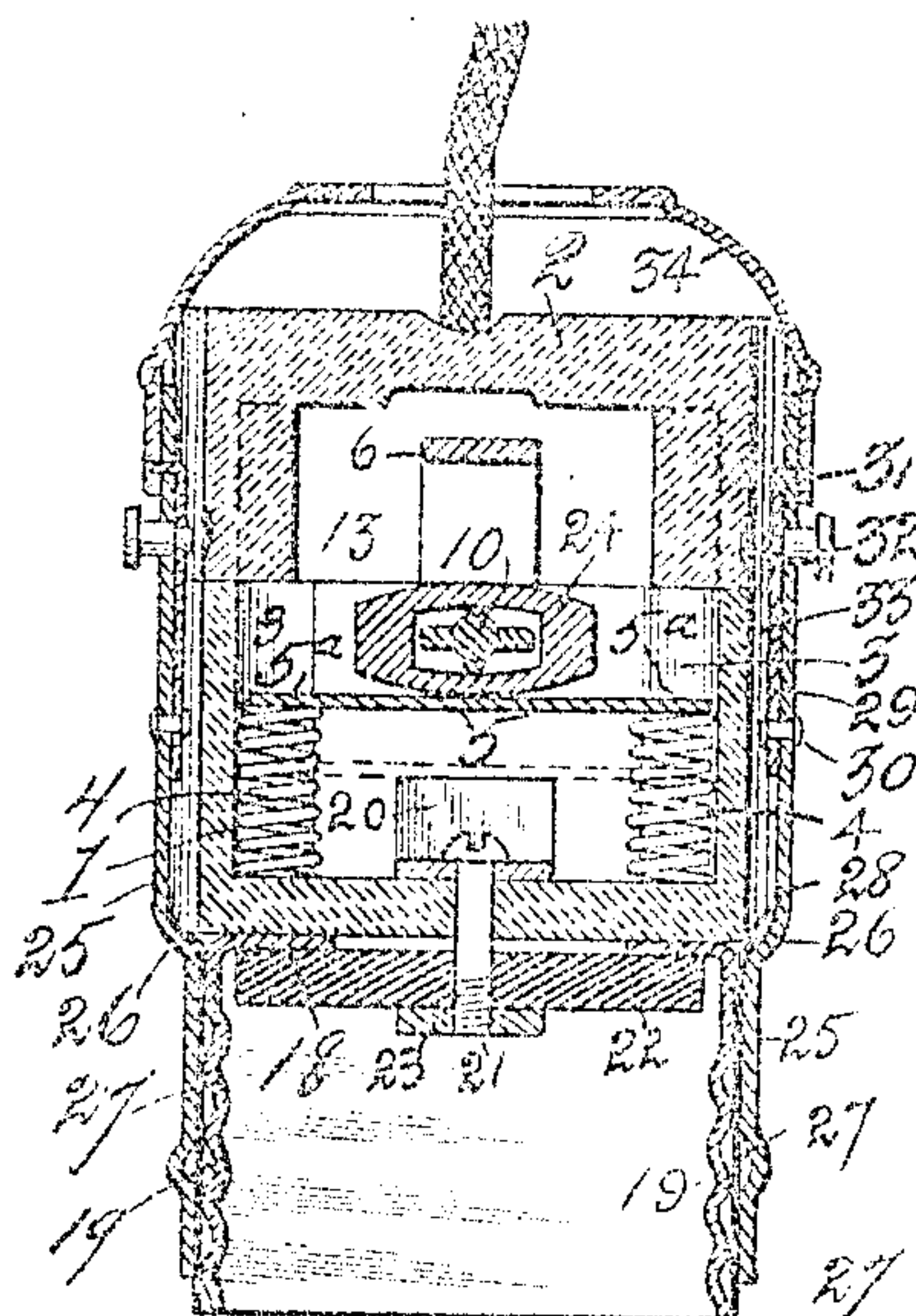


Fig. 2

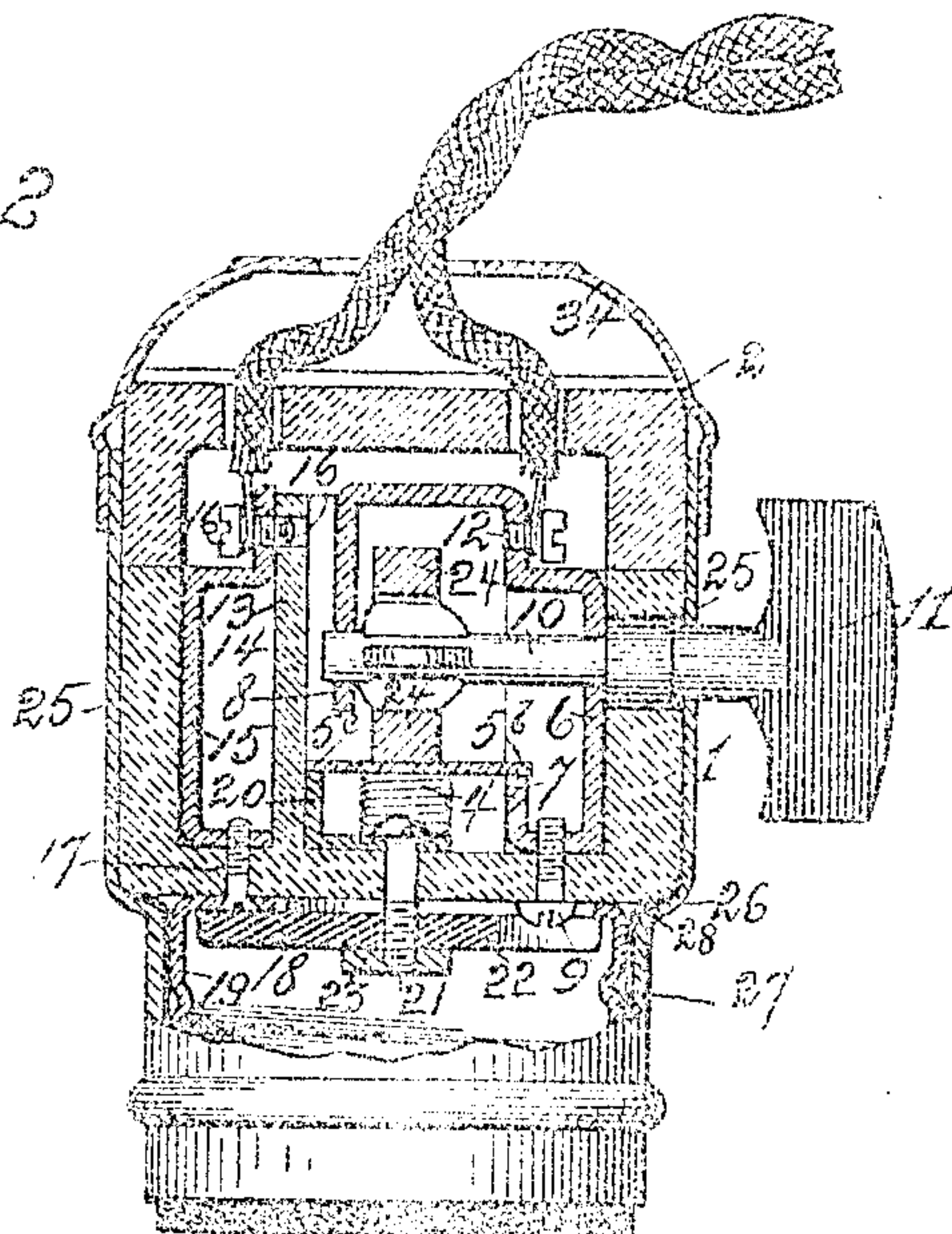
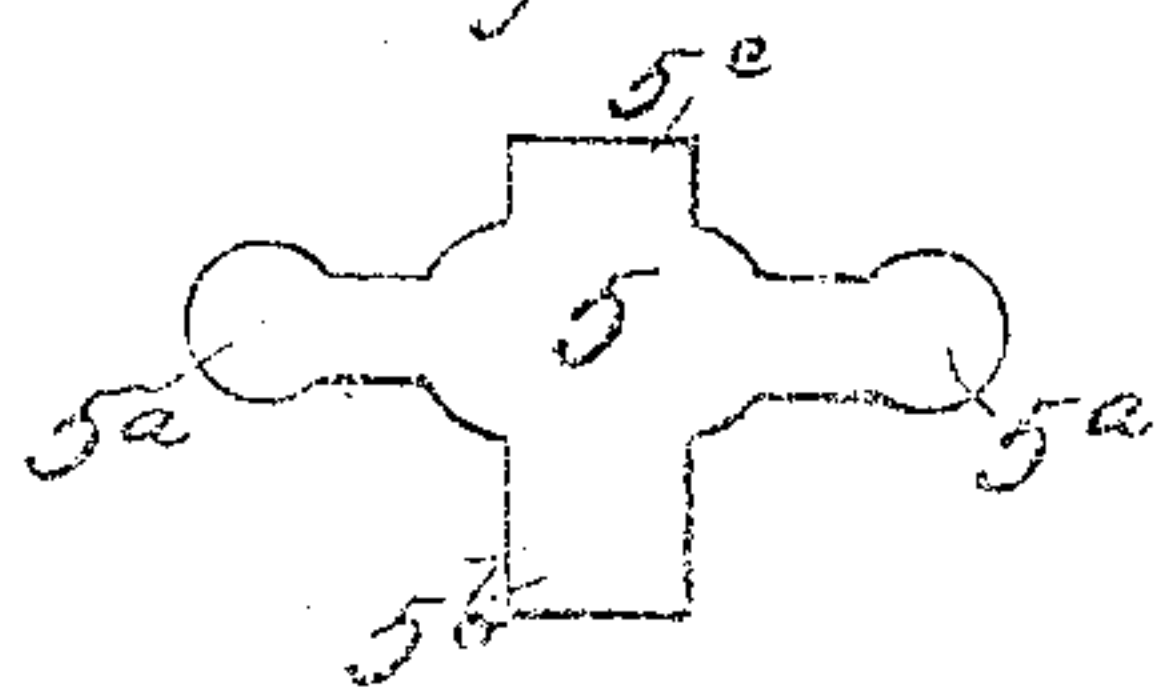


Fig. 3.



WITNESSES:

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LAMP-SOCKET FOR INCANDESCENT LAMPS.

No. 848,281.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed July 11, 1904. Serial No. 216,087.

To all whom it may concern:

Be it known that we, CHARLES M. KEIER and EDWIN W. KEIER, citizens of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Lamp-Sockets for Incandescent Lamps; and we do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to sockets for incandescent lamps; and its object is to furnish a cheap, simple, and efficient construction, and more particularly to provide a lamp-socket in which the metallic working parts and binding-posts and conductors shall be completely inclosed in porcelain or equivalent material which answers for insulation between the outer shell of the socket and the parts contained within the chamber of the porcelain body of the device.

Heretofore the make-and-break device of this class of lamp-sockets has usually consisted of a spring which by the turning of the key has been thrown into and out of circuit. In this construction it frequently happens that the spring becomes heated and loses its resiliency and soon breaks or forms an arc which burns out and destroys the lamp-socket.

A further object of our invention is to overcome the difficulty here indicated.

A further object of our invention is to provide for our socket a shell having a cap, the two parts being readily and conveniently separable by means of novel spring fastening devices.

A further object of our invention is to dispense with the insulating sleeve or tube of "fiber" heretofore interposed between the socket-shell and the body of the socket, and to thus obviate a considerable item of expense in the manufacture of these articles and to do away with much annoyance attending the assembling of the parts due to the shrinking and swelling of this fiber sleeve or tube.

A further object of our invention is to provide a construction which will overcome the necessity for cemented joints and in which

there shall be no exposed screws to be lost or to be covered with cement.

We attain these objects by means of the devices and arrangement of parts hereinafter described and shown, and illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical sectional elevation of our lamp-socket; Fig. 2, the same taken at a right angle to the point of view in Fig. 1, and Fig. 3 a top plan view of the make-and-break plate or "bridge" hereinafter referred to.

Like numerals of reference indicate like parts throughout the drawings.

In the drawings, the parts 1 and 2 constitute the body of our socket, the part 2 serving as a cap or cover for the part 1. These parts are formed preferably of porcelain, but may be composed of other suitable non-conducting substances. The parts 1 and 2 are oppositely recessed to form a chamber when the margins of the recesses are brought together. At opposite sides of the chamber of the part 1 are recesses or pockets 3, parallel with the axis of the socket. In these recesses are coiled-wire springs 4.

5 is a plate, preferably of copper, formed as a cross. The extremities of two of the opposite arms are rounded, as at 5^a, (see Fig. 3,) to conform to the tops of the springs 4 and to the recesses 3. The recesses retain the springs in place and form a guide for the ends of the cross-arms 5^a.

6 is a metal bar bent so that one end 7 is turned upwardly, the other end 8 being turned downwardly. This bent piece is disposed in the chamber of the parts 1 2 and is secured to the bottom of the chamber by a screw 9, passing through the bottom of the part 1 and through a threaded hole in the bar. The upturned end 7 of the bar 6 forms a contact for the arm 5^b of the plate 5 when this plate is depressed. The downwardly-turned end of the bar 6 has a transverse hole therethrough, which forms a bearing for one end of the stem 10 of the external key 11, the stem also passing through and having a bearing in another hole in the part 6 at the outer end of the stem. The part 6 is provided with a binding-screw 12, which engages one of the electric terminals. It will be seen that the part 6 furnishes two bearings for the key, a contact-point for the make-and-break mechanism, and a binding-screw for connection with one of the terminals. Across the cham-

ber of the part 1 and formed integral therewith is a partition 13, between which and the wall of the part 1 is a recess or pocket 14. In this recess is a bar 15, secured to the partition 13 at top by a binding-screw 16, which engages the other of the terminals, and secured at bottom by screw 17, which engages the inwardly-turned flange 18 of the threaded socket-piece 19, designed to secure the corresponding part of the lamp, and passes through the bottom of the porcelain piece 1 and into a threaded hole in the bar 15.

20 is a short bar bent at a right angle disposed on the bottom of the chamber of the part 1, the upturned portion being adapted to contact with the arm 5^a of the plate 5 when depressed. The other or horizontal arm of the piece 20 is secured to the bottom of the piece 1 by means of a central screw 21, passing through the horizontal arm of the part 20, through the bottom of the piece 1, through vulcanite disk 22, and into nut 23. This screw 21 by means of its head and nut secures in place the contact-point 20 and the disk 22, which disk in turn engages and secures in place the inwardly-turned flange 18 of the threaded socket-piece 19.

Upon the stem 10 of the key 11 is loosely mounted in the usual or any preferred manner a "cam" 24, the arrangement of the cam being such that when the key is given a quarter-turn to the position indicated in Fig. 2 the cam wipes the upper face of the plate 5, overcoming the thrust of the springs 4 and forcing the arms 5^a and 5^b down into contact with the parts 7-20. A further quarter-turn of the key removes the pressure of the cam upon the plate 5 and permits the plate with a very quick movement, actuated by the spring 4, to break contact with the parts 7-20. When the parts are in the position shown in Fig. 1, it will be seen that the circuit is open, and when the parts are in the position indicated in Fig. 2 the circuit is closed through binding-screw 12, bar 6, point 7, plate 5, piece 20, nut and screw 21-23 to one terminal of the lamp, thence through the lamp to the screw-socket piece 19, screw 17, bar 15, and binding-screw 16.

25 is a sheet-metal shell cylindrical or polygonal in cross-section and of such diameter as to receive with a snug fit the parts 1-2. The part 25 is formed with a shoulder 26, upon which the margin of the bottom of part 1 rests. Below the shoulder 26 the shell 25 is contracted, and between the contracted portion and the threaded socket-piece 19 is interposed a sleeve 27, of fiber or other suitable insulating material, separating the shell and the threaded socket-piece. At top the sleeve 27 is flanged outwardly, as at 28, the flange being clamped between the shoulder 26 and the bottom of the piece 1.

29 29 are flat springs the bottom extremities of which are riveted, as at 30 to the inner

side of the shell 25. The upper end of the pieces 29 are bent outwardly, as at 31, the outwardly-turned ends passing through corresponding holes in the shell. To each of the spring-pieces 29 is secured a thumb-piece 32, extending outwardly through the shell 25 and adapted to move the springs. The parts 1 and 2 are recessed, as at 33, to permit the play of the springs.

34 is a sheet-metal cap having in its top a hole for the passage of the wires and of such form and diameter as to closely fit over the top margin of the shell 25. Near the bottom margin of the cap 34 at its opposite sides are holes which receive the outwardly-turned ends 31 of the springs 29 and which secure the cap in place. The interior of the cap presses upon the top of the part 2 and holds this part firmly in assembled relation with part 1. When the thumb-pieces 32 are pressed inwardly, the outwardly-turned portions of the springs 29 are disengaged from the cap, and the cap may be slipped off, and the part 2 may be separated from the part 1, thus exposing the interior chamber of the device and permitting convenient access for inspection, adjustment, and repairs.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a device of the described character, a pair of porcelain blocks oppositely recessed to form a chamber, a pair of coiled springs in said chamber, a contact-plate supporting said springs, a pair of contact-pieces adapted to contact with said plate, an external key extending into said chamber, and means upon said key for actuating said plate.

2. In a device of the described character, a chambered body, a pair of coiled springs in the chamber, a plate supporting said springs, a pair of electric terminals in said chamber, and means for actuating said plate, the arrangement being such that the plate may be manually forced into contact with the terminals and forced out of contact by means of the springs.

3. In a device of the described character, a chambered body, a metal strip having at one end a return-bend forming a contact-point, having also at its other end a return-bend provided with a hole in alignment with another hole in the strip, a key journaled in said two holes, a binding-screw engaged with said metal strip, and means for securing said metal strip in the chamber of said body.

4. In a device of the described character, a block of insulating material, said block having a chamber which chamber has recesses forming pockets in its sides, a coiled spring in each of said recesses, a make-and-break plate held normally open by said springs, and means for manually moving said plate into closed position.

5. A device of the described character

comprising a two-part porcelain block having in the interior thereof an inclosed chamber, one of said parts having through one of its walls two holes for the inleading and out-
5 leading conductors, two binding-screws in said chamber, two terminals adapted for engagement with corresponding lamp-terminals and leading into said chamber, connections in said chamber between said terminals
10 and said binding-screws, a make-and-break device in said connections, and a key which controls said make-and-break device, com-

bined with a two-part shell adapted to receive and to hold said two block parts in assembled relation, and means for detachably
15 securing said shell parts together.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES M. KEIER,
EDWIN W. KEIER.

Witnesses:

CLEM V. WAGNER,
M. L. MARKS.