

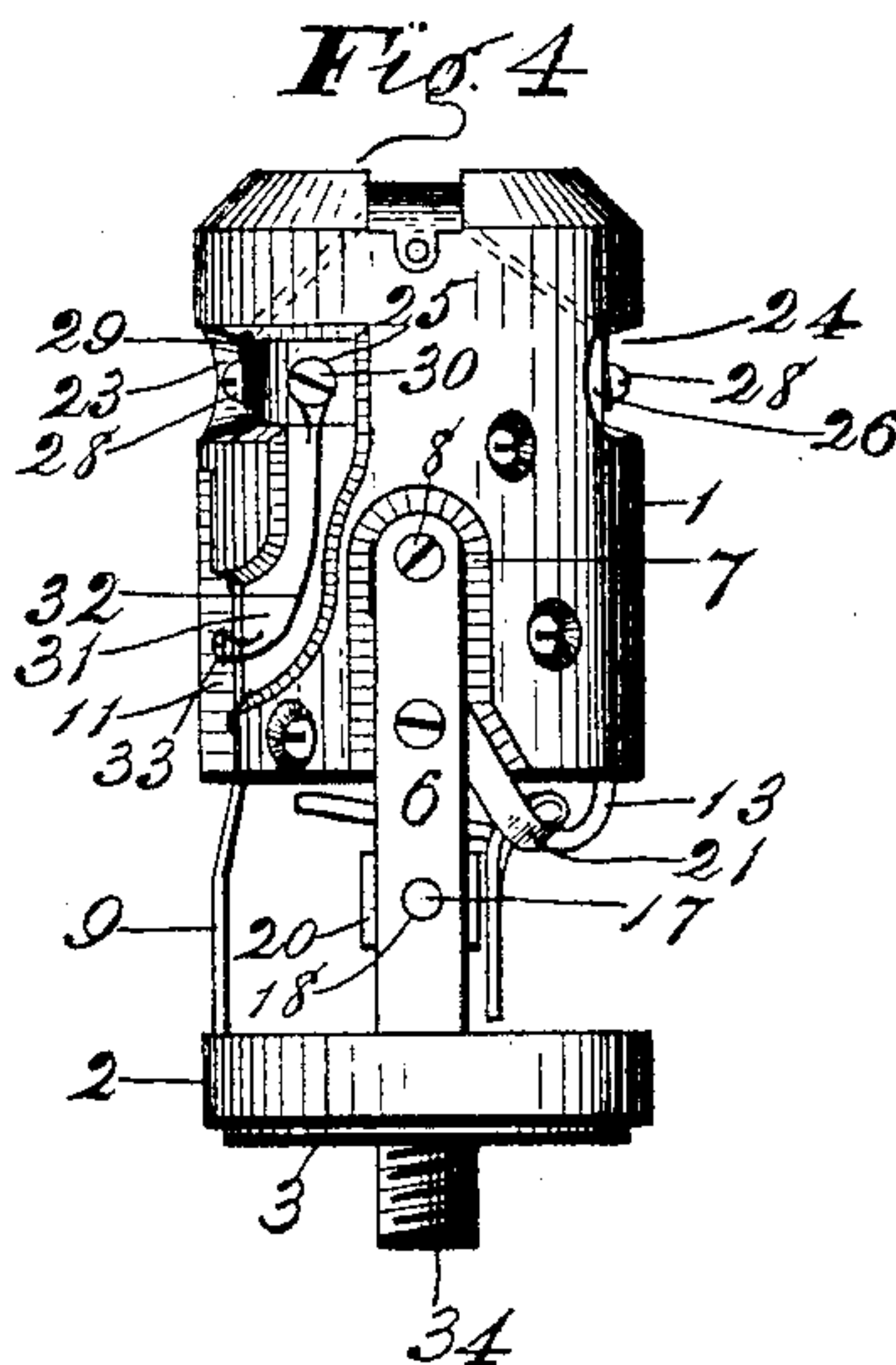
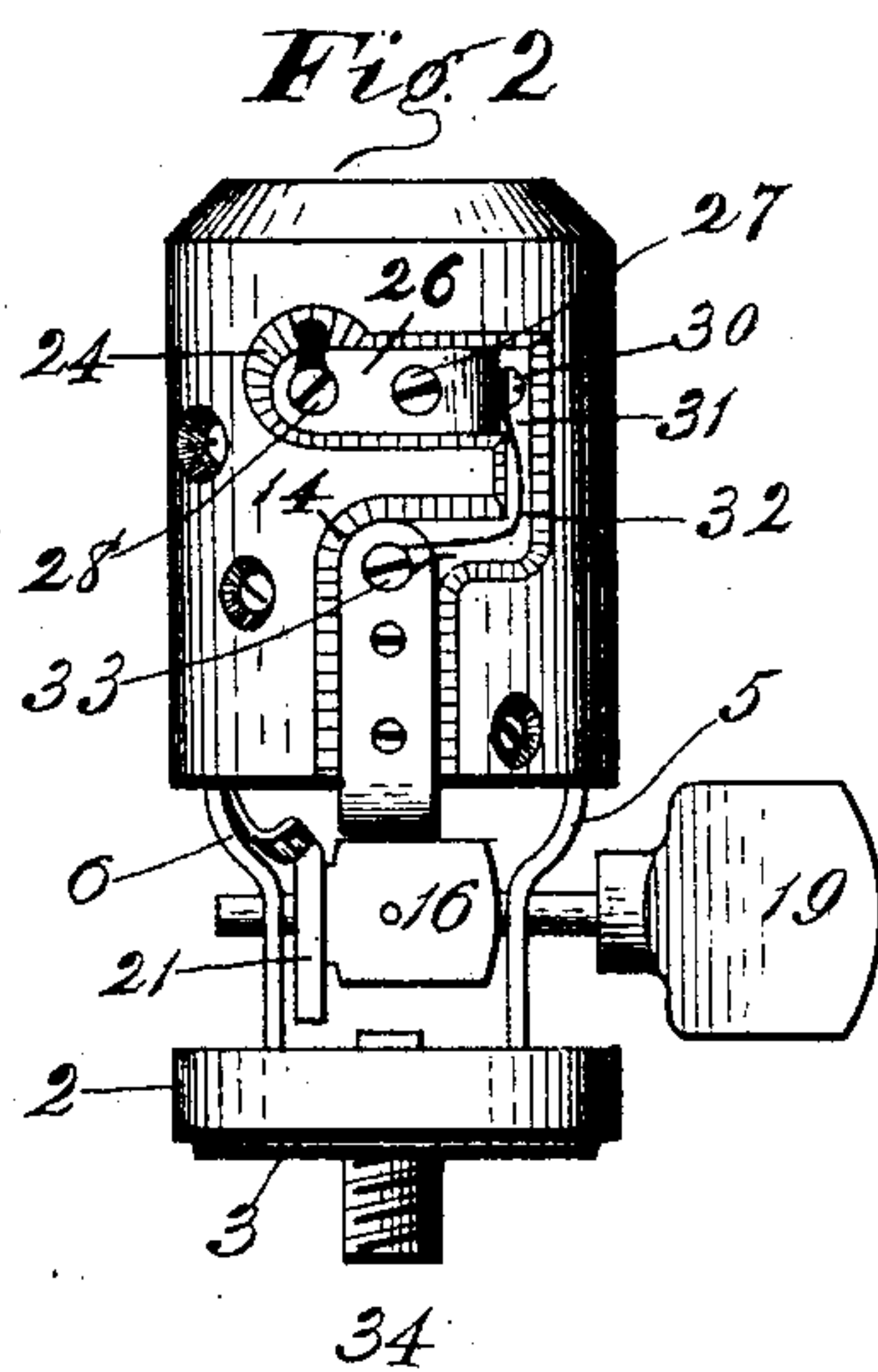
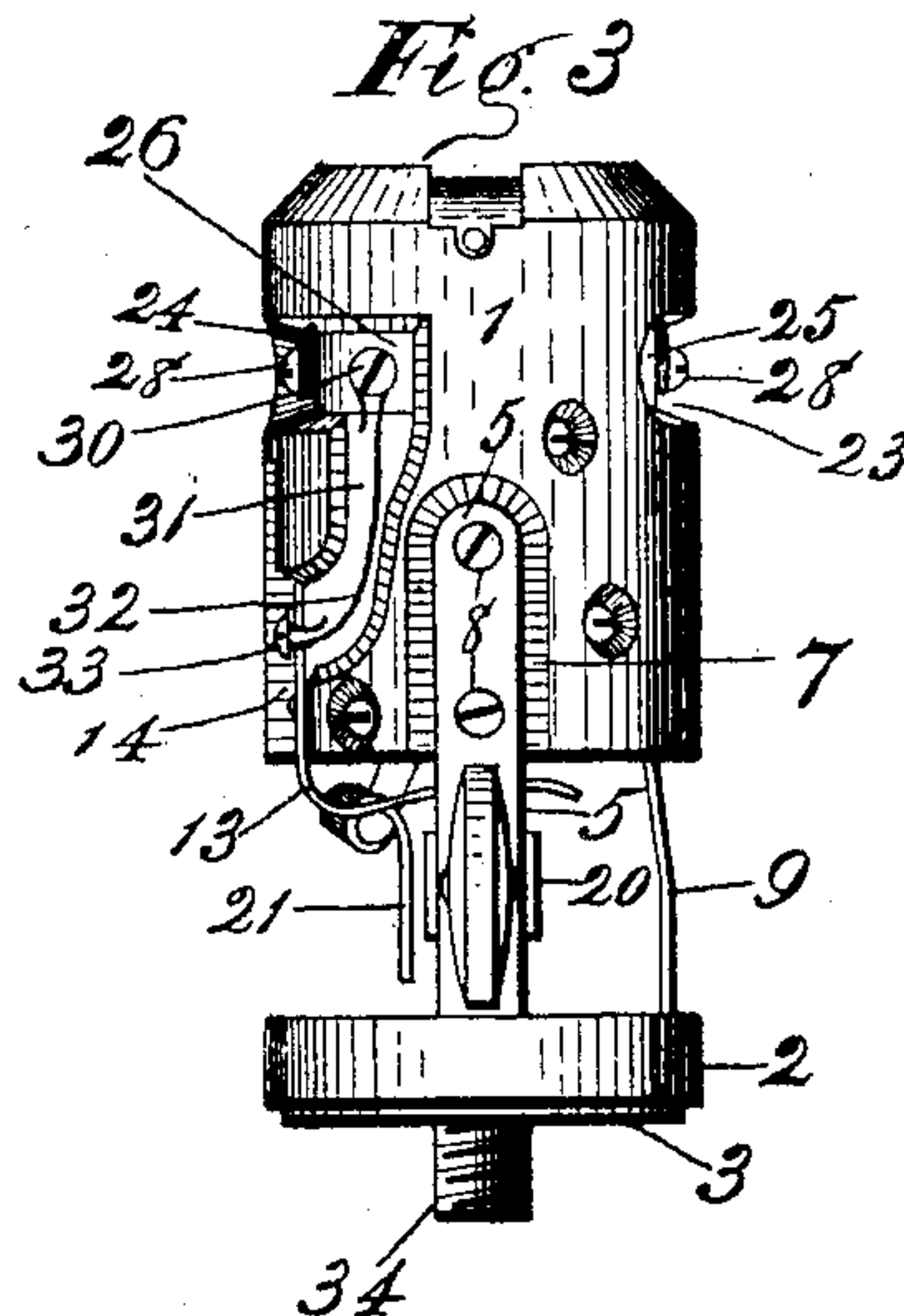
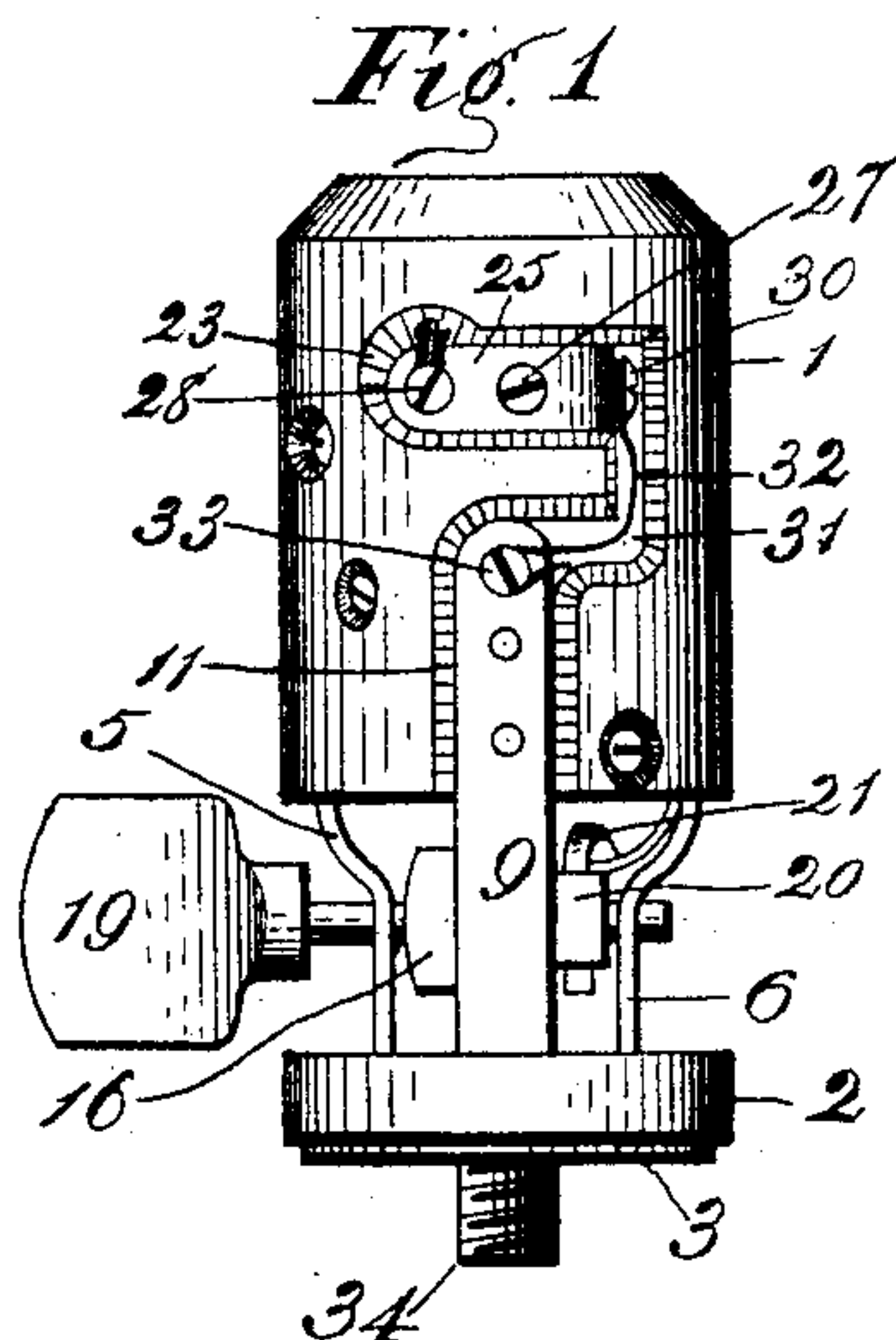
(No Model.)

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S. H. RUSSELL.
FUSIBLE SOCKET FOR ELECTRIC LAMPS.

No. 583,820.

Patented June 1, 1897.



WITNESSES

E. C. Overholt.
G. C. Lyddane.

INVENTOR

By *S. H. Russell*
W. T. Fitzgerald & Co.

ATTY'S.

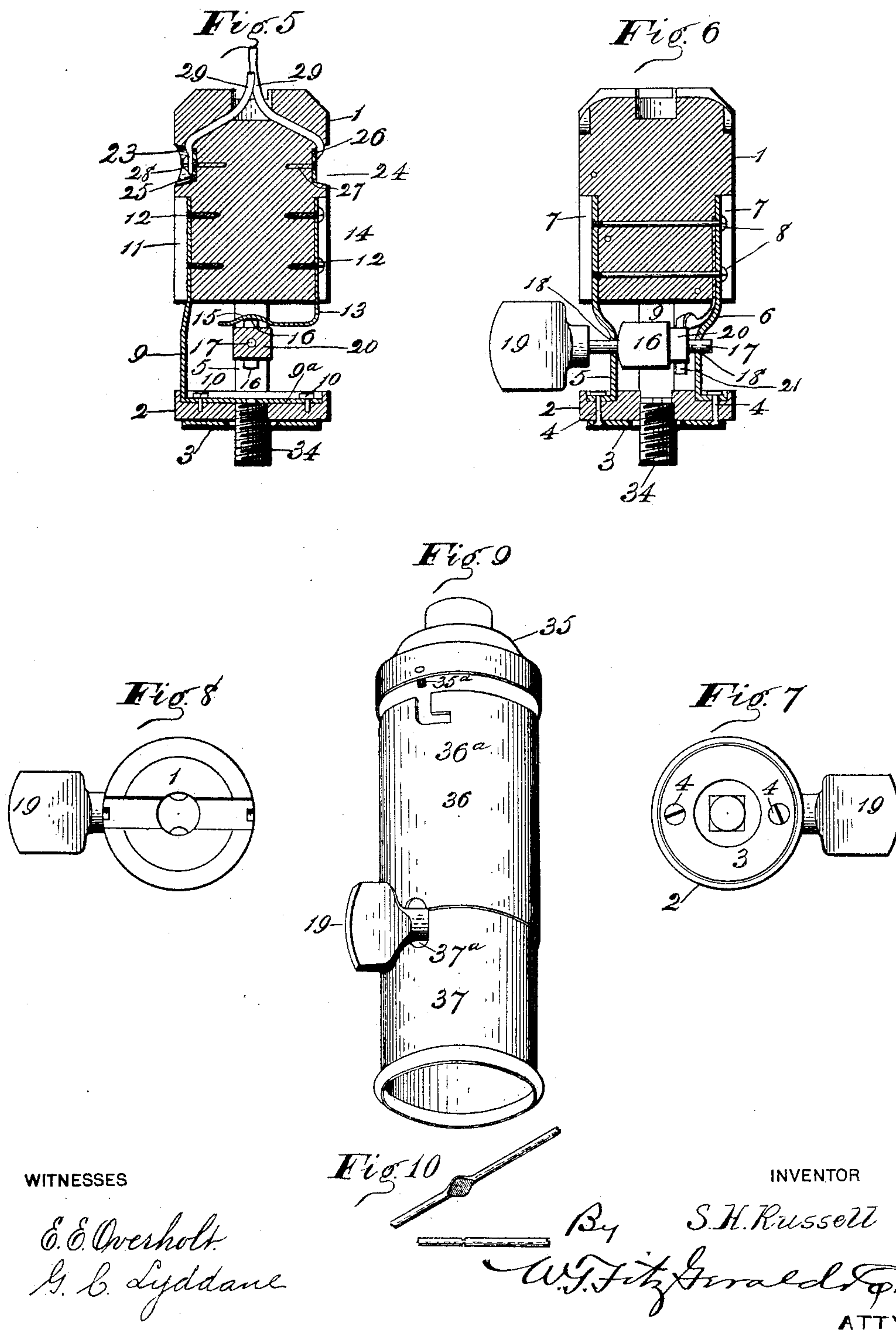
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UNITED STATES PATENT OFFICE.

SAMUEL HUMES RUSSELL, OF WATSONVILLE, CALIFORNIA.

FUSIBLE SOCKET FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 583,820, dated June 1, 1897.

Application filed December 7, 1896. Serial No. 614,812. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL HUMES RUSSELL, a citizen of the United States, residing at Watsonville, in the county of Santa Cruz and State of California, have invented certain new and useful Improvements in Fusible Sockets for Electric 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, as will be hereinafter fully described and claimed, has relation to automatic cut-offs for electric lamps, and relates more particularly to a special form of automatic cut-off that will be adapted for location within the socket employed to receive the threaded end of the usual incandescent globe.

I am aware of automatic cut-offs wherein the use of easily-fusible material is employed, but so far as I am aware none of the appliances are adapted to individual application upon the lamps.

By the use of my invention I render it possible to easily locate any deficiencies due to a burned out condition or a short circuit.

As my invention is located intermediate the lamp and the line-wire, an individual automatic cut-out is provided for such mediator, rendering it possible for any one of the lamps to become disabled by "blowing" or burning out without any interference with the other lamps along the line.

By the use of the existing method employed for providing a cut-out, all of the lamps would be extinguished or all of those lamps located on the opposite side of the cut-out from the source of electric supply.

A further purpose subserved by my invention and an additional advantage therefor lies in the fact that great simplicity of construction is observed in providing the fusible wire and connection therefor, enabling said wire to be easily and cheaply replaced when destroyed.

A further advantage in locating the cut-off within the socket arises from the fact that easy accessibility thereto is provided, obviating the necessity of tearing out plastering or partitions or reaching not conven-

iently accessible places in which the cut-off may be located, such, for instance, as within rosettes upon high ceilings or the like, necessitating that skilled labor shall be employed to do the work, whereas my improved fusible connection, being readily accessible, may be renewed by any one of ordinary intelligence. It may be stated, therefore, that the essential feature of value in my invention resides in combination of the socket and fusible wire, which will be of a regulated predetermined size, adapting it to perform its office by becoming fused or melted by an excess of current.

In the accompanying drawings, Figure 1 is a side elevation of my improved fusible socket with the outer casing removed. Fig. 2 is an elevation of the opposite side thereof. Fig. 3 is a side view taken from the left side of Fig. 1. Fig. 4 is a side view taken from the right side of Fig. 1. Fig. 5 is a longitudinal section through the median line of Fig. 1. Fig. 6 is a longitudinal section taken at right angles to the line of division observed in Fig. 5. Fig. 7 is a bottom view. Fig. 8 is a top view. Fig. 9 is a perspective view of the socket within its outer casing or housing. Fig. 10 is a preferred form of construction for the fusible wire.

Reference will be had to the several details by figures. The same figure will be employed upon the same part throughout the views.

In materializing my invention I first provide the convenient form of holder or body 1, constructed of any suitable non-conducting material, such as porcelain, glass, or the like, and preferably having a cylindrical form, as shown. The periphery of the cylindrical body thus provided is cut away or recessed to provide a countersink or seat in which to locate the several parts without liability of their contacting with the outer casing or shell, which will hereinafter be referred to.

As a part of the body 1 I provide the disk or base 2, which is also to be formed of non-conducting material and is provided upon its outer face with the contacting plate 3, rigidly secured thereto by retaining-screws 4, which reach through the base into and connect with the standards 5 6, which extend upward and

form a rigid connection with the body 1 by having their upper ends seated in the recesses 7.

The upper ends of the standards 5 6 are held in their operative seats by means of the retaining-screws 8, which pass entirely through the body from one standard to the other, and thus provide for the retention of the standards within their seats and also for an electrical union thereof through the body.

I locate, preferably upon the right-hand side of the body, (shown in Fig. 1,) the standard 9, which is substantially L-shaped in form, the horizontal section or base 9^a of which is adapted to fit within a transverse recess provided in the inner face of the base 2, where it is rigidly secured to the base by means of the anchoring-screws 10, seated within the base, or by brazing it to the stem or anchor 34.

The upper end of the standard 9 is seated in the recess 11, provided in the body, and there held by the retaining screws or bolts 12, arranged to pass entirely through the body to convenient points on the opposite side thereof.

The switch-plate 13 is seated in the recess 14, provided therefor, and extends downwardly to the lower end of the body 1, when it is bent substantially at right angles and extends nearly across the end of the body and is provided with a corrugation or retaining-bend 15, said corrugation or bend being adapted to engage with the rounded end of the switch-block 16, constructed substantially in the usual manner and mounted upon its operating-shaft 17, seated in suitable bearings or apertures 18, provided in the standards 5 6, and adapted to be rotated therein by means of the thumb-piece 19.

The switch-block 16 is substantially oblong in form, and preferably integrally formed therewith is the rectangular adjusting-head 20. The office of said head is to engage with the depending spring 21, so mounted that it will engage with the corners of the head when the latter is rotated.

When the switch-block is so adjusted that one of its ends will occupy the bent section 15, the side of the head 20 and the spring 21 will rest parallel to each other and directly in contact, thus providing that the switch-block will be held in connection with the bent section until the tension of the spring is overcome by causing the next corner of the head to pass it.

The upper end of the spring 21 is provided with apertures adapted to receive the retaining-screws 8, and is thus secured in position within the recess or seat 7 and between the upper end of the standard 6 and the body.

Within the upper end of the body, preferably on a line with the standard 9 and the secured end of the switch-plate, I form the transverse recesses 23 24, and within the same I locate and secure the poles 25 26, which are securely anchored or connected to the body by the retaining-screws 27.

The retaining-screws 27 are suitably seated

in the body sufficiently to provide a sure means of anchoring said poles, which are preferably formed of a piece of sheet metal of suitable character. To one end of the plate thus provided (preferably the left end thereof) I provide the clamping-screws 28, adapted to set up a connection between the electric wires 29 and said plate, while upon the other end of the plate I provide the clamping-screws 30.

The recesses 23 24 are connected to the recesses 7 and 11 by downwardly-extending grooves 31, adapted to form a seat or housing for the fusible wires 32, extending from the retaining-screws 30 downward to the retaining-screws 33, located upon the upper end of the standard 9 and the switch-plate 13. By this arrangement of the several parts it will be seen that an electrical union is set up between the poles 25 26 and the contacting collar 4, and as the delicately-constructed fusible wires form the connecting-link it will be seen that the destruction of said wires, or either of them, will open the circuit and thus extinguish the light.

The size of the fusible wires forming the automatic cut-off will be determined by practice and experience, thus providing that any undue excess of current will automatically extinguish the light of the particular lamp upon which it is applied, leaving all other lights upon the line intact and unaffected.

If desired, the middle or other preferred section of the fusible wire may be more thinly or delicately drawn, rendering it more sensitive to an excess of current, or, if preferred, the wire may be flattened or almost severed at one part of its length, effecting the same result. Both of these suggestions for the construction of the fusible wire are illustrated in Fig. 10 of the drawings.

It will be understood that any equivalent for the construction herein described and illustrated may be adopted, as it will of course be understood that such equivalent is comprehended by me—that is to say, the upper ends of the standards 5 6 could be connected to the body by encircling bands (not shown) properly seated in recesses in the face of the body and adapted to form electrical connection between the parts secured.

Similar means could be employed for connecting and securing other parts in their respective operative positions, and I do not therefore wish to be confined strictly to the exact construction herein illustrated.

Integrally or otherwise connected to the base-section 9^a and extending diametrically through the base 2 is the threaded anchor or stem 34, adapted to form electrical connection between the parts thus described and the lamp.

Adapted to inclose the body 1 and its accompanying parts, as above set forth, I provide the cylindrical housing illustrated in Fig. 9, and consisting of the cap 35, the cylindrical body 36, and the cup 37, adapted to

fit within each other and held in position by suitably-provided set-screws or their equivalent. A recess 37^a is provided in the cup-section adapted to accommodate the shank of the thumb-piece 19 in the usual manner.

The cap 35 has a diametrical opening, through which pass the insulated wires for conveying the electric current. In order to enable the cap to be easily removed from the section 36, I provide the bayonet-joint 36^a in the upper edge of said body, adapted to engage lugs or points 35^a, formed upon the cap in the manner usual to joints of this character.

In order to provide for a more perfect insulation of the body 1 and the parts attached thereto, I find it desirable to add a lining 38, formed, preferably, of mica or the like, which will effectively insulate any protruding retaining screw or plate should the same not be perfectly constructed and seated.

By the use of my improved automatic individual cut-out for electric lamps it will be seen that should the wire 32, which is formed of lead, zinc, or any composition having a suitably low fusing-point, become severed only the lamp to which it is applied will be disabled, leaving the current to flow back to the main wire without loss thereof or danger incident to a short circuit.

Having thus fully described my invention and set forth the advantages thereof, further description is dispensed with.

What I claim as new, and desire to secure by Letters Patent, is—

1. An electric-lamp socket and switch consisting in an insulating-body, a base consisting of an insulating-disk and a contact-plate, connected with said body by standards in electrical union with said plate at their lower ends and with each other at their upper ends; a switch-block and shaft therefor operatively mounted in said standards; an anchoring-stem insulated in and passing through said base and in electrical union with the feed-wire

of the lamp; a switch-plate in electrical union with the return-wire of the lamp, the free end of said plate lying in the path of the switch-block, and a fusible wire mounted in said body and adapted to break the circuit on excess of current, substantially as specified and for the purpose set forth.

2. As an improvement in fusible sockets for electric lamps, the combination with an insulating-body of an insulating-disk held away from and attached to said body by the standards 5 and 6; a contact-plate connected to the outer face of said disk and in electrical union with said standards; an anchoring-stem passing through said disk and plate and held insulated from the latter; a fusible link secured in a recess in the body; means for connecting said stem and link with the feed-wire of the lamp; a return-wire having a fusible link mounted in the body; a contact-plate in electrical union with said wire; a switch-block having an adjusting-head rotatably mounted in said standards, and a securing-spring for said head, all operatively combined in the manner and for the purpose set forth.

3. The herein-described fusible socket for electric lamps consisting of the cylindrical body and disk-like base, said body being provided with a series of recesses in its peripheral face; standards in electrical union with each other connecting said body and base; poles or angle-plates 25 and 26 recessed in the upper part of the body and in electrical union with the lamp; fusible links connected to said poles; means for connecting said links with the source of electric energy and for opening and closing the circuit, substantially as specified and for the purpose set forth.

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

SAMUEL HUMES RUSSELL.

Witnesses:

D. A. McEWEN,

H. M. ANDERSON.