

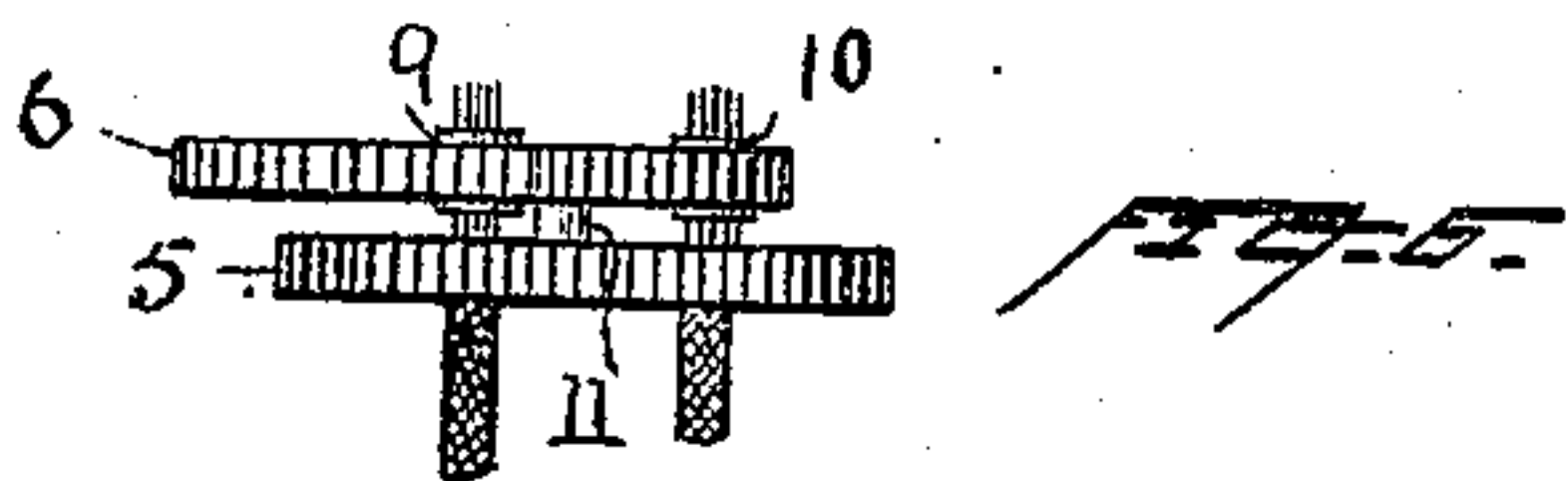
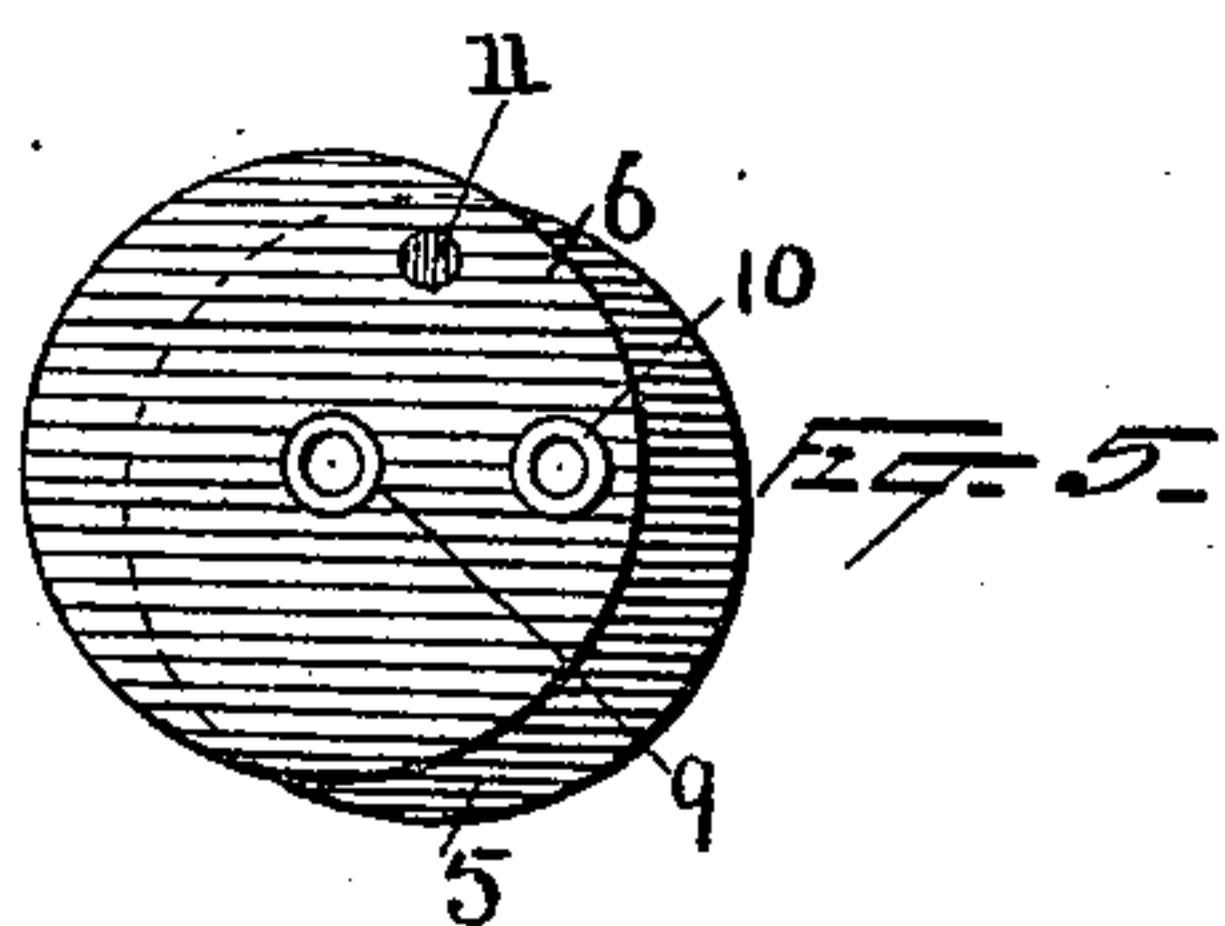
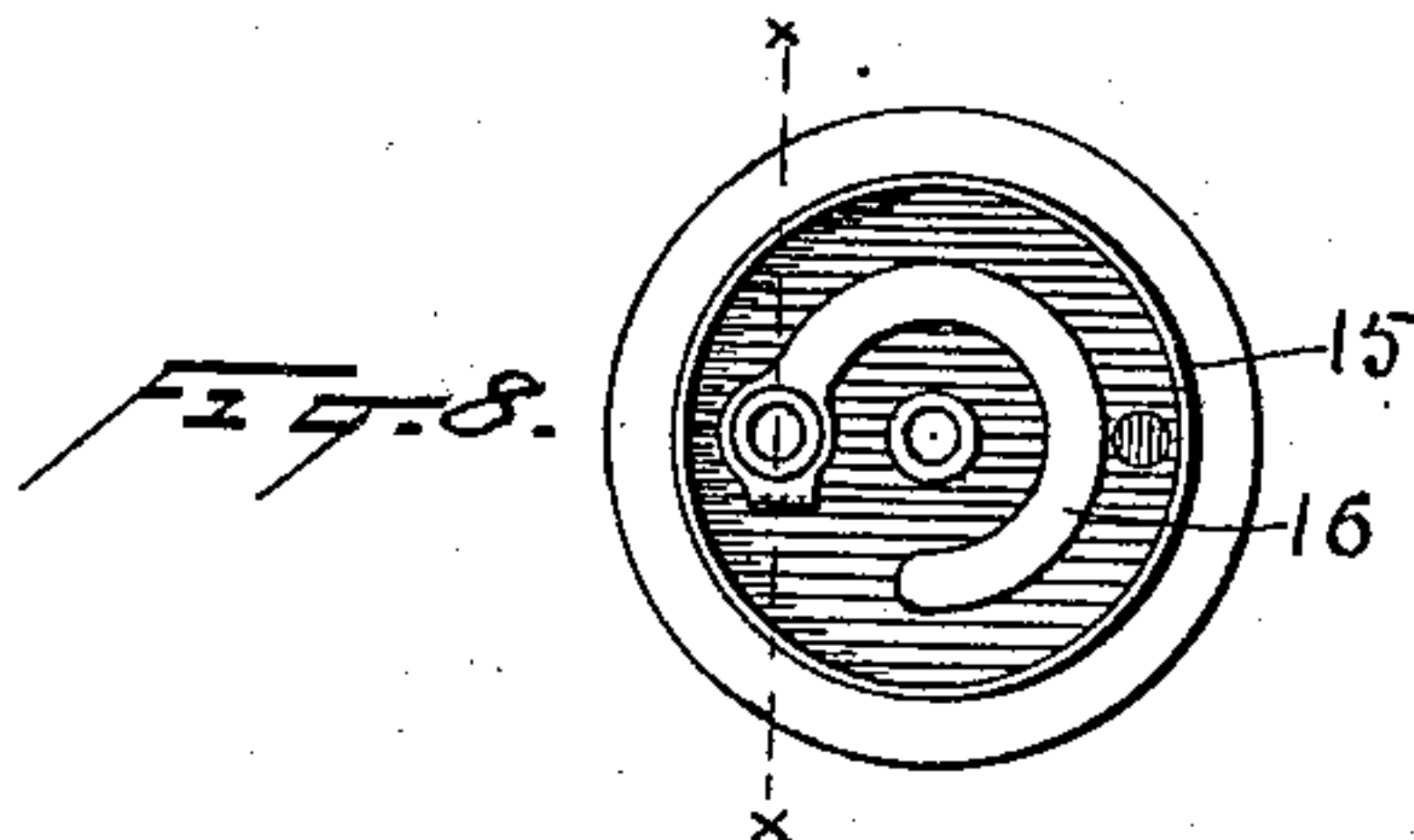
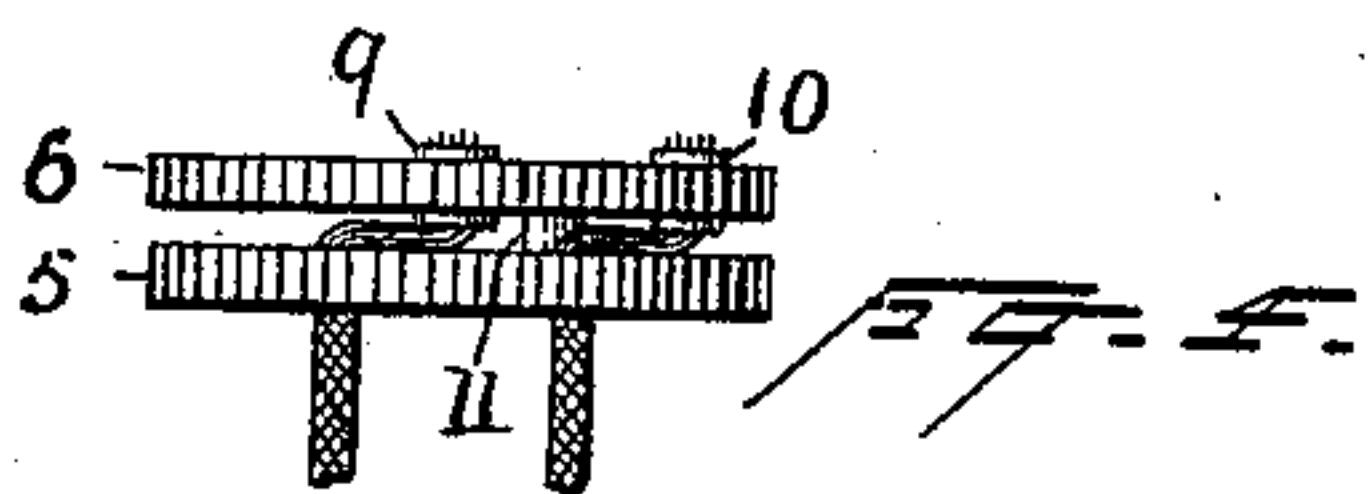
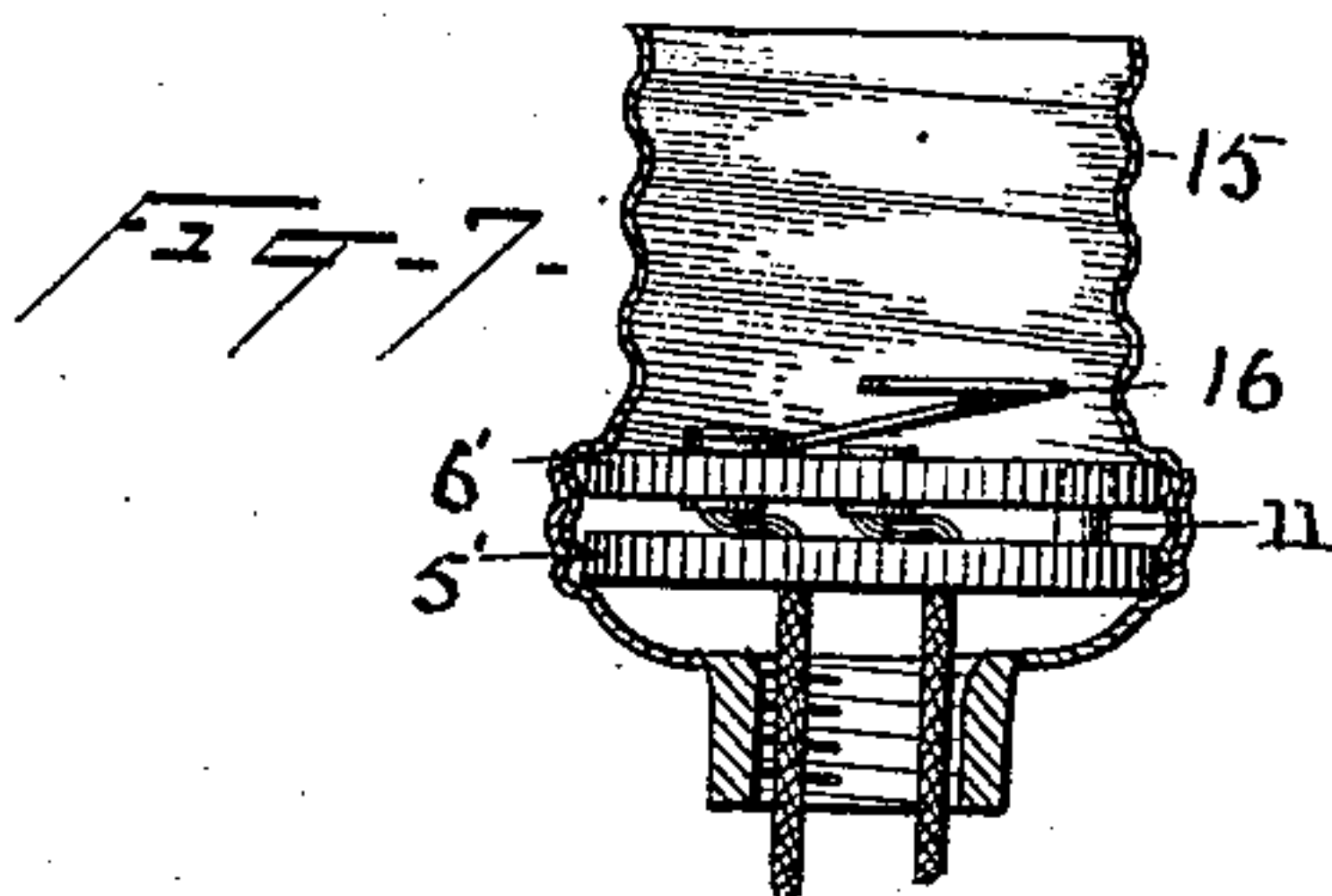
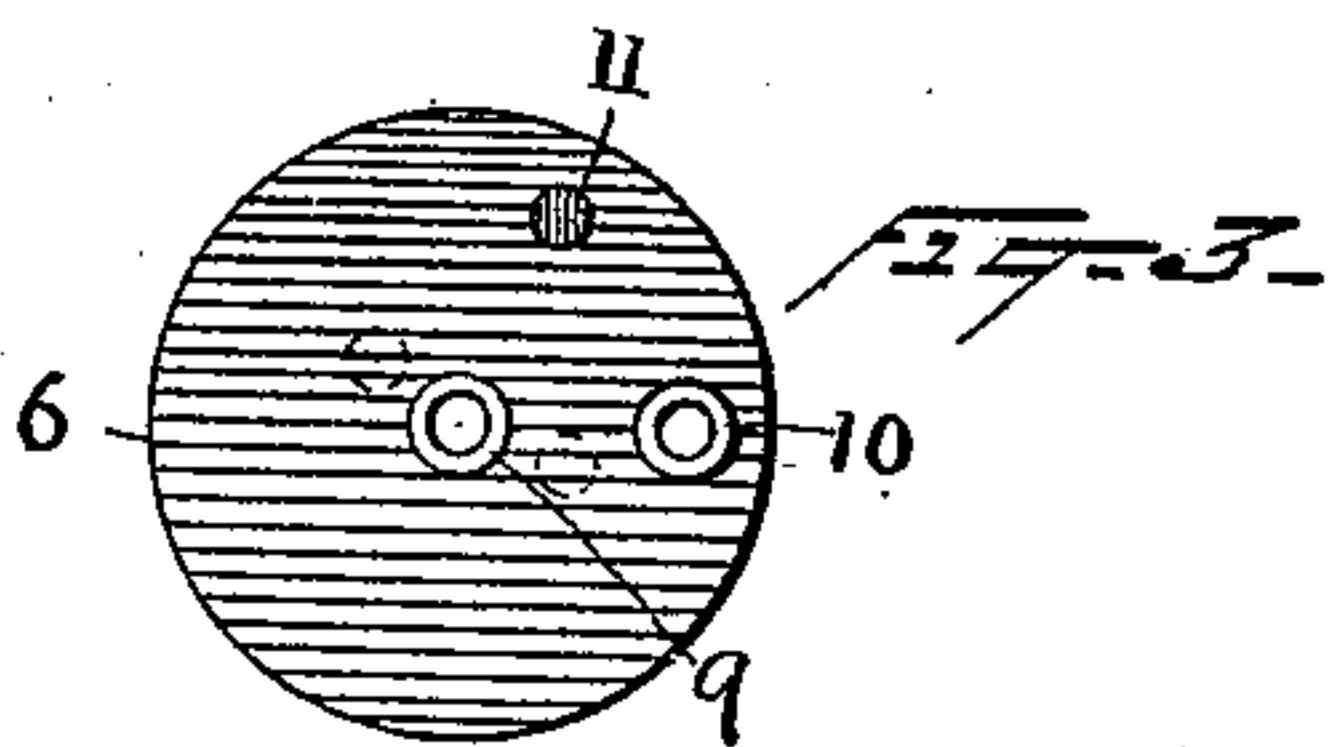
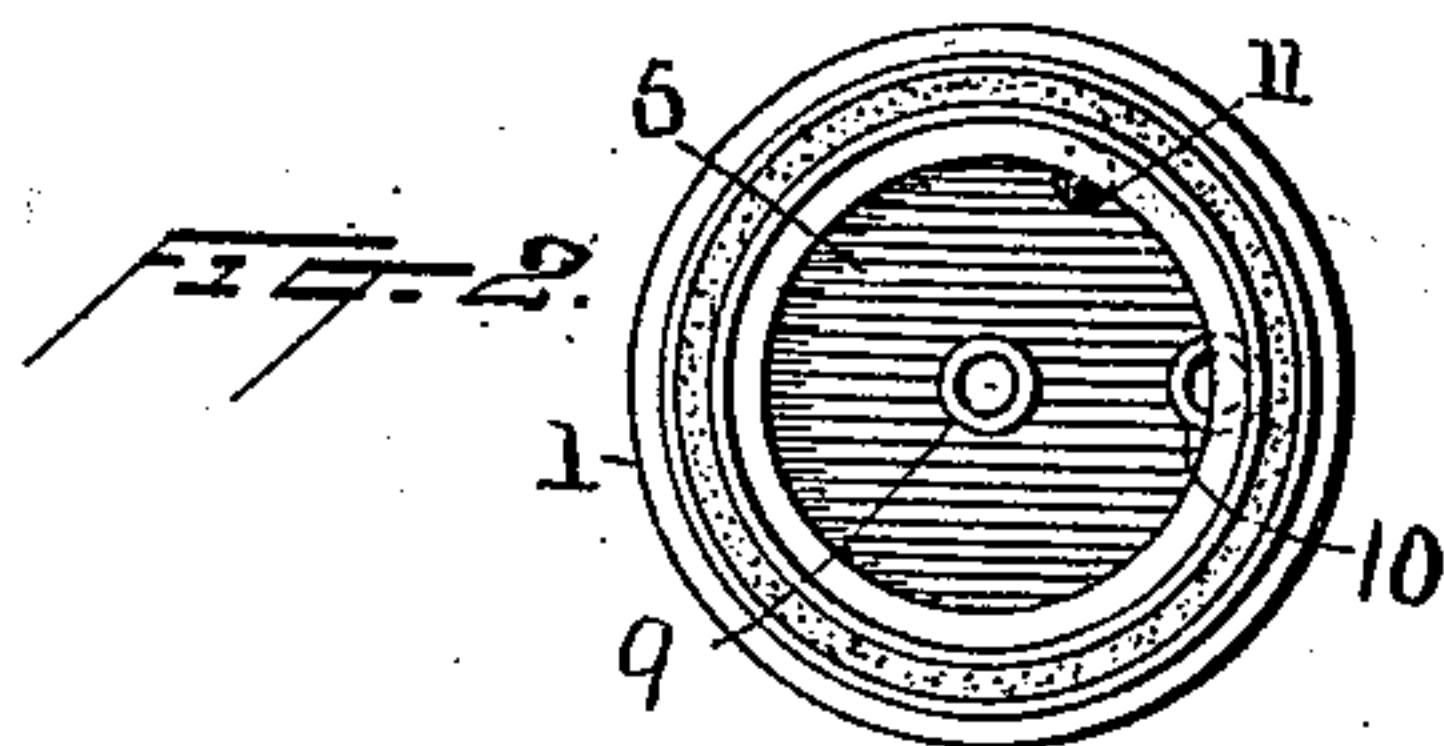
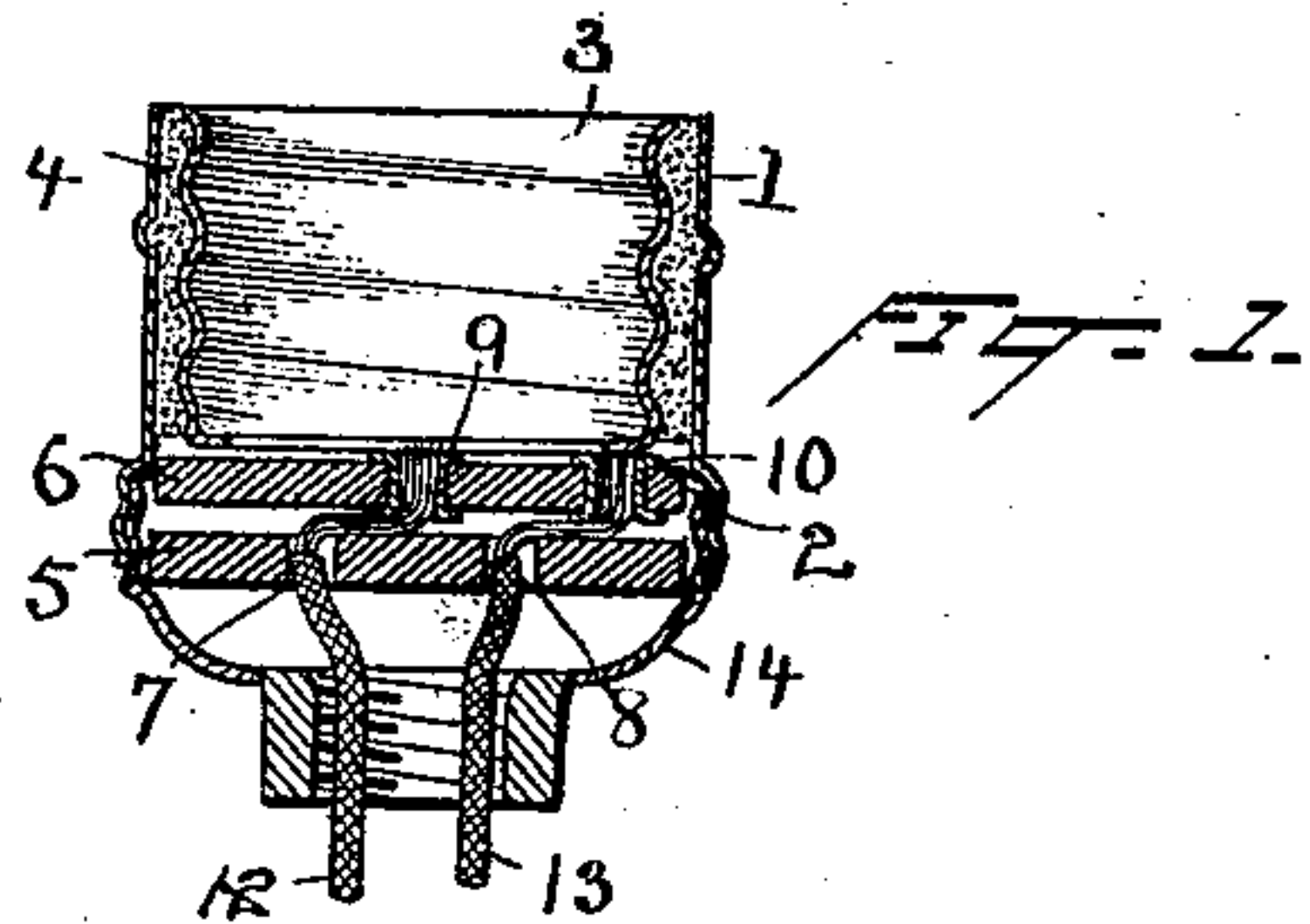
(No Model.)

2 Sheets—Sheet 1.

H. P. BALL.
INCANDESCENT LAMP SOCKET.

No. 501,485.

Patented July 18, 1893.



Witnesses
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Inventor
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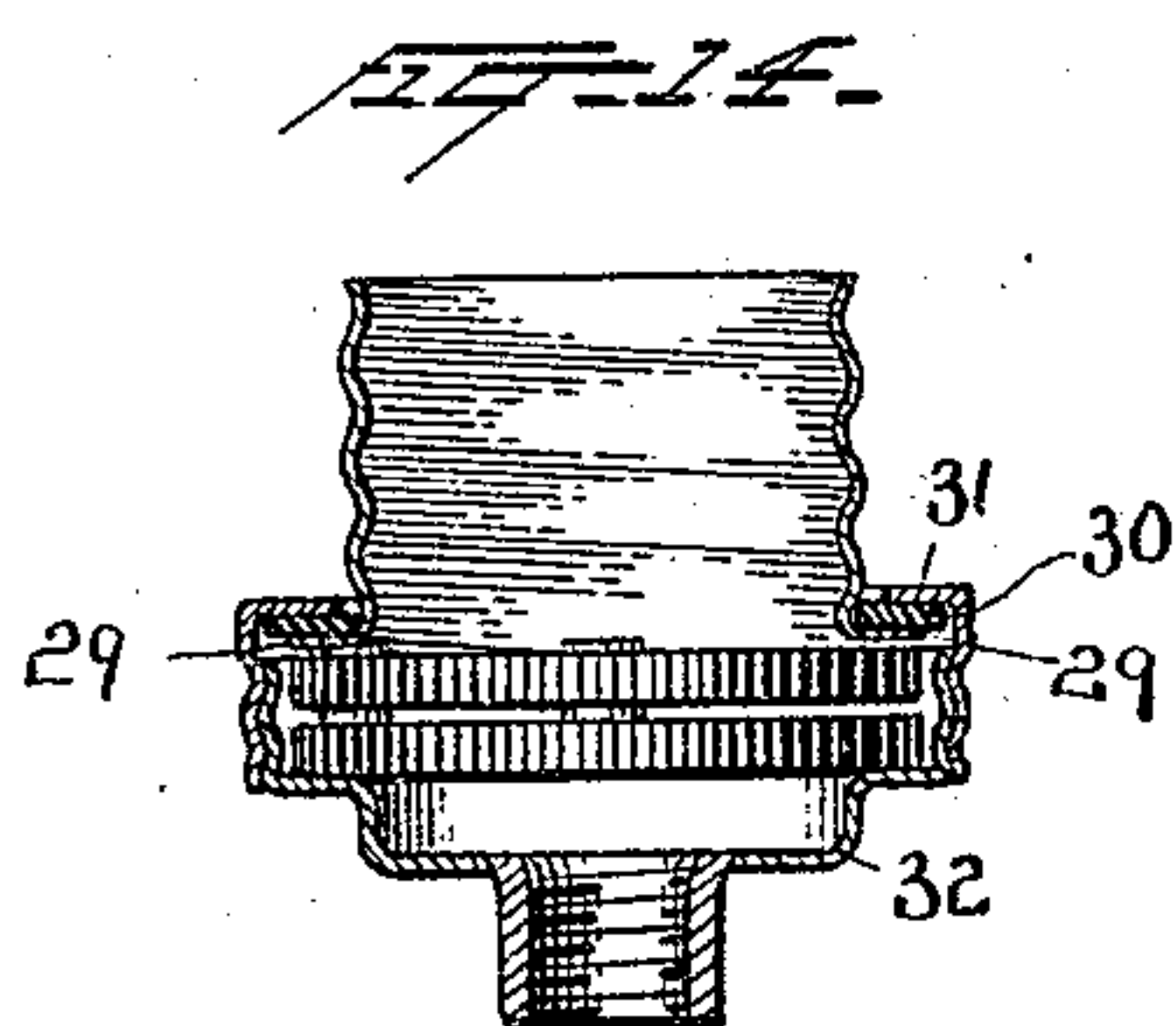
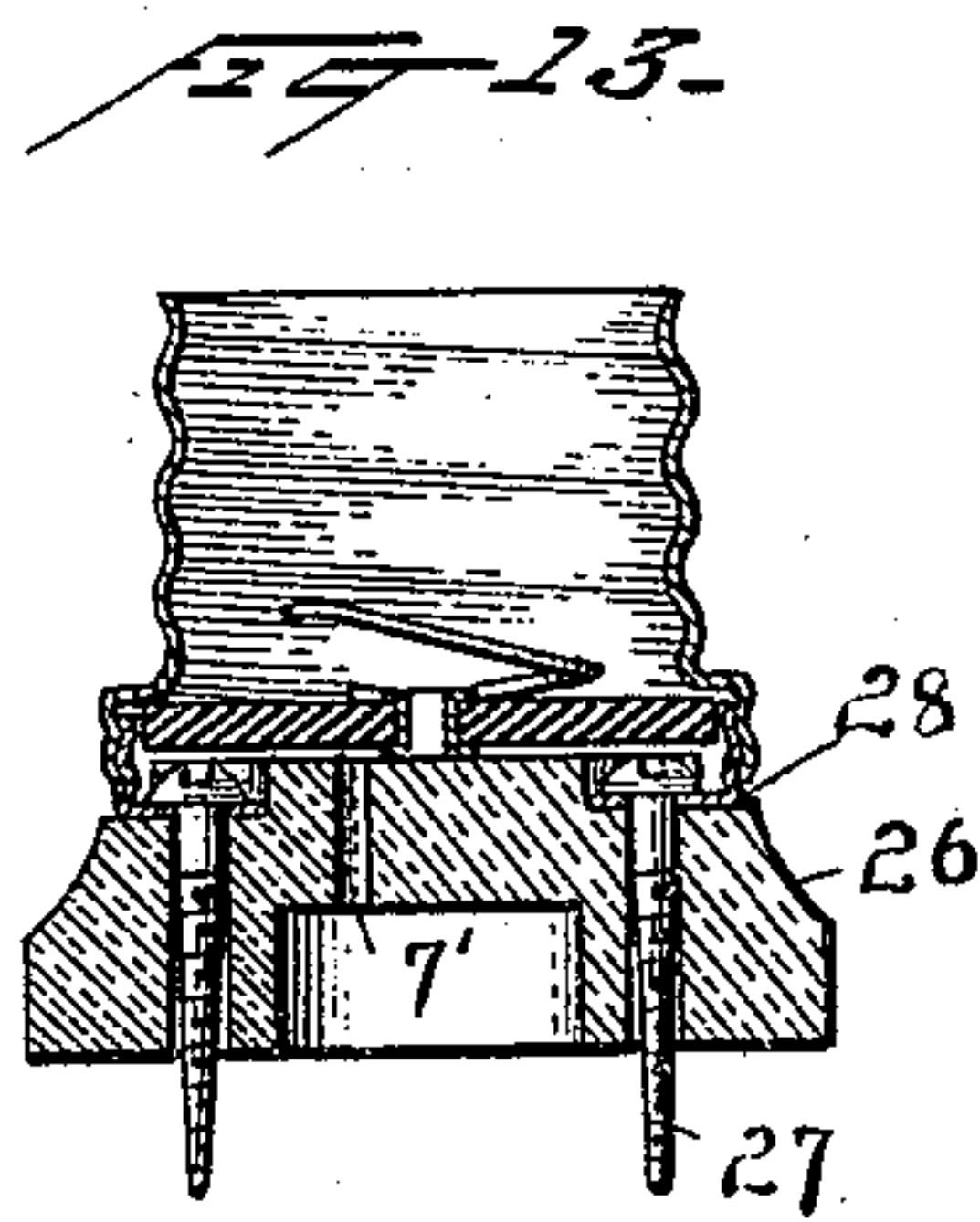
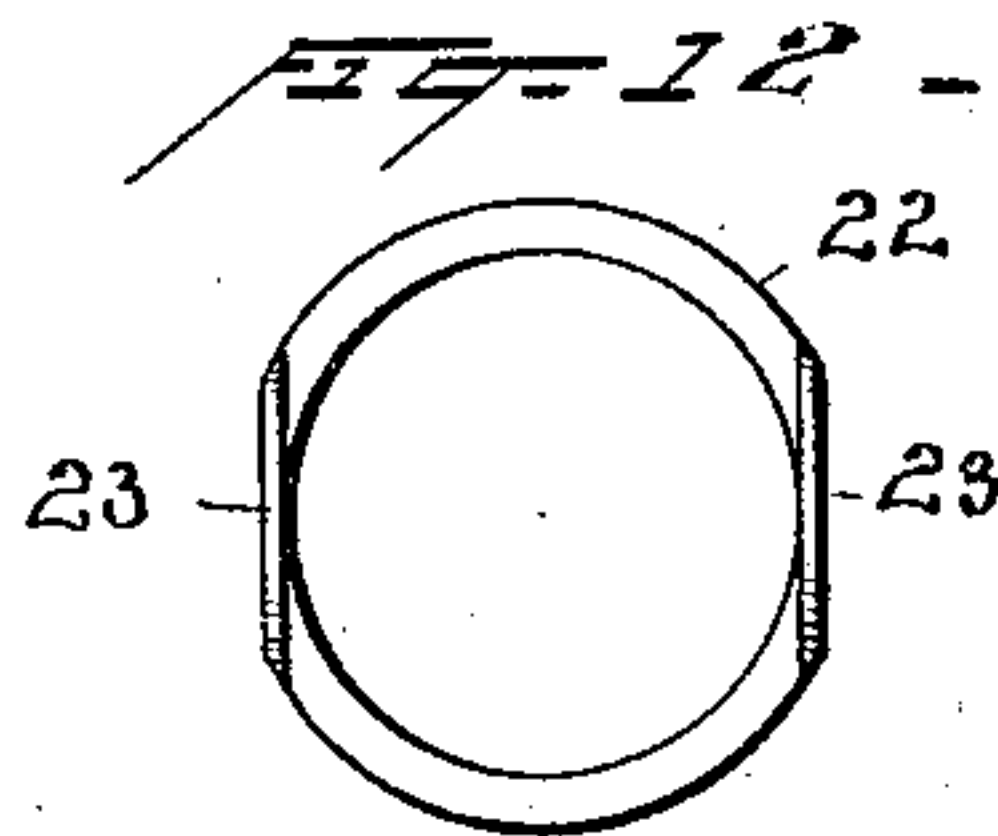
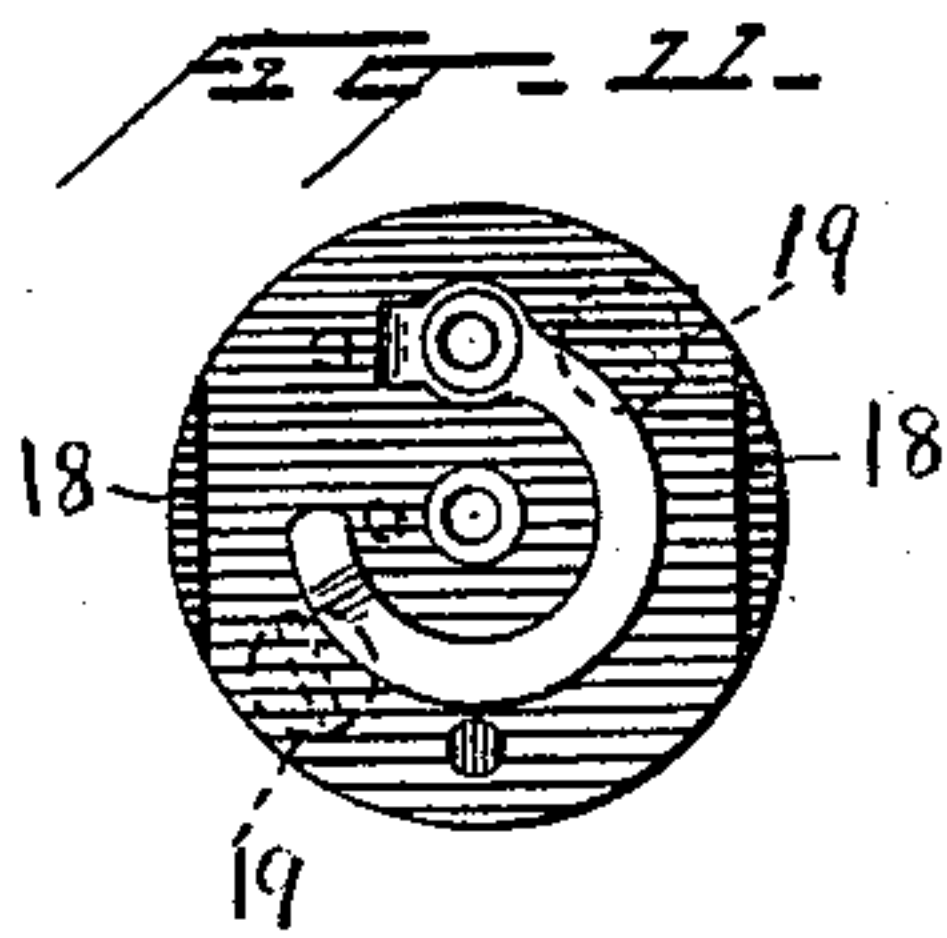
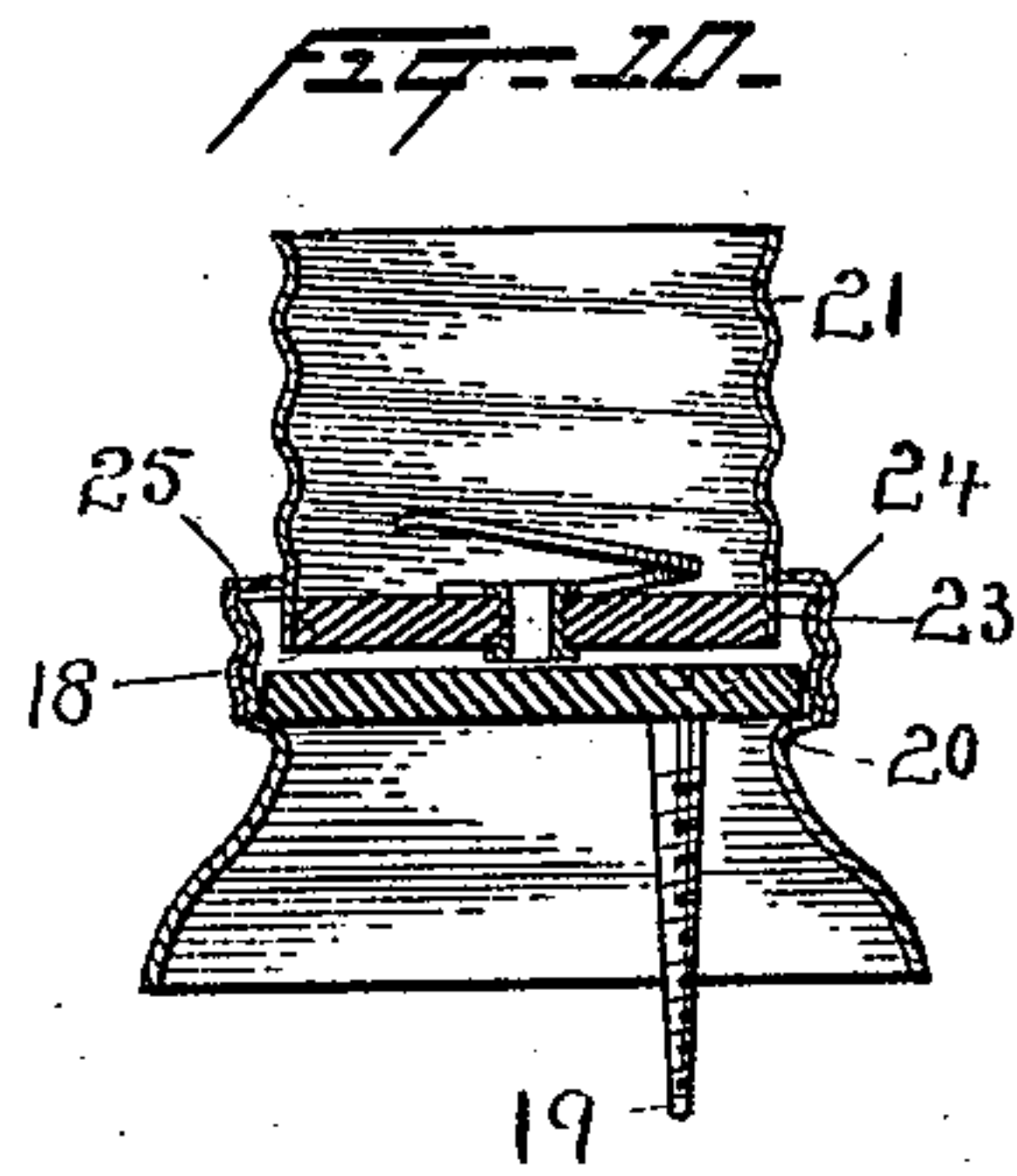
(No Model.)

2 Sheets—Sheet 2.

H. P. BALL.
INCANDESCENT LAMP SOCKET.

No. 501,485.

Patented July 18, 1893.



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UNITED STATES PATENT OFFICE.

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INCANDESCENT-LAMP SOCKET.

SPECIFICATION forming part of Letters Patent No. 501,485, dated July 18, 1893.

Application filed August 3, 1892. Serial No. 441,996. (No model.)

To all whom it may concern:

Be it known that I, HENRY PRICE BALL, a citizen of the United States, residing at Schenectady in the county of Schenectady and State of New York, have invented a certain new and useful Improvement in Incandescent-Lamp Sockets, of which the following is a specification.

The present invention relates to sockets adapted to receive the necks of incandescent lamps or other electrical devices, and to connect their terminals to a supply circuit.

The main object of the invention is to simplify and cheapen, at the same time improving, devices of the character mentioned.

The invention consists, first, in an improved device for connecting wires to sockets or other devices.

The invention consists, second, in a socket having a body of improved construction.

The invention consists, finally, in certain combinations hereinafter more fully described and set forth in the claims.

In the accompanying drawings, Figure 1 is a central section of my socket adapted for the well known form of Edison lamp. Fig. 2 is an end view thereof. Figs. 3 and 4 are plan and side views, respectively, of the socket body detached. Figs. 5 and 6 are plan and side views, respectively, of said body, the sections thereof occupying the positions which they assume when the parts are being assembled. Figs. 7 and 8 are sectional and plan views of a socket adapted for a different type of lamp. Fig. 9 is a section of one part of the socket body on the line $x-x$ of Fig. 8. Figs. 10, 13 and 14 are sectional views of modified forms of sockets. Fig. 11 is a plan view of the socket body used in the socket shown in Fig. 10; and Fig. 12 is a view looking at the lower end of the screw-threaded contact sleeve.

Sockets, as ordinarily constructed, consist of a metal shell, within which is a body, generally built up of several insulating and metal parts, and supporting socket terminals to which conductors of a supply circuit may be connected, and socket contacts which are adapted to co-operate with terminals on the neck of a lamp. The socket bodies, as generally constructed, are expensive and quite complicated, as also are the terminal and con-

tact devices, and the means for connecting the supply circuit conductors to the socket terminals are often difficult or inconvenient to manage, said means being generally screws adapted to clamp the conductors, which are inserted under the heads of the screws, to the terminals. By the present invention the socket body is reduced to very small proportions and is of simple construction and such that no screws or other separate devices are necessary for securing the conductors of the supply circuit to the terminal or contact devices.

In Figs. 1 and 2, 1 is a sheet metal shell having a screw-thread 2 at one end and supporting within the other end a screw-threaded ring 3 adapted to receive the screw-threaded metal neck or terminal of an ordinary Edison lamp. This sleeve I secure in place by means of a filling 4 of a suitable material, such, for example, as sulphur, which is poured into the annular space between the shell and sleeve while in a molten condition and when cold securely holding said parts in place. Heretofore in manufacturing this part of the socket it has been customary to insert a straight vulcanized fiber tube between the outer shell and the screw-threaded ring, thus wedging the parts together. This has been found a troublesome and imperfect mode of supporting the parts, especially because the fiber tubes become warped out of shape and expanded by the effect of moisture so that they do not fit properly. With the construction indicated it was also necessary to make special provision to prevent the screw-threaded sleeve turning in the shell.

The socket body consists simply of two insulating plates or disks 5, 6, the former having two holes 7, 8 through it, and the latter having two similar holes through it, within which, preferably, are metal eyelets or hollow rivets 9, 10, which form the socket terminals. One of the disks is provided with a pin 11 at one side of the center, and the other disk is provided with a hole into which said pin is adapted to fit. The holes 7, 8 in disk 5, and the corresponding holes having eyelets 9, 10 in disk 6, are at the same distance apart but are differently located in their respective disks, as shown in the drawings. The eyelet 9 occupies the center of its disk and consti-

tutes the central contact device of the socket. The eyelet 10 is near the edge of the disk, so that it will stand directly under the inwardly turned flange at the base of the screw-threaded sleeve 3. The conductors 12, 13, which preferably consist of several fine wires twisted together, so as to give conductivity and flexibility, when the parts of the socket are assembled, pass through the holes 7, 8, bend to one side, and then pass through the eyelets 9, 10, terminating at or near the upper ends thereof. Figs. 5 and 6 indicate the manner in which these conductors are inserted and secured. The disks are put together as indicated in Fig. 5, the pin in one disk engaging the corresponding hole in the other, and the holes for the conductors in the two disks being in line. The conductors 12, 13 can then be inserted through the neck of the cap 14 and threaded directly through the holes in both disks. When they have thus been threaded said disks are held from moving apart to any great extent, and the two disks are brought together so that they register as shown in Figs. 3 and 4, one of the disks turning on the pin 11 bending and clamping the conductors. The disks are then placed in the position in the cap 14 indicated in Fig. 1 and the sleeve 1 is screwed onto the cap, thereby pressing the disks together and the upper disk against the contact sleeve 3, securely connecting the conductors to the socket terminals and giving excellent electrical contact between the conductors and terminals without the use of binding screws.

While it is preferred to have the cap screw inside of the shell as in Fig. 1, it may screw outside as in Fig. 7, but this is less convenient since the shell has to be inserted between the rim of the cap and the disks, 5, 6.

The disks or sections, having holes which are out of line with each other when the disks or sections register and when they are clamped in a suitable holder or by suitable means, constitute an improved connecting device, the use of which is not limited to sockets. While two perforated disks 5, 6 are shown, this particular number is not essential; neither is it essential in all cases to employ the pivot pin 11, although this is desirable. The conductors 12, 13, where they extend through the upper disk, may in some cases serve directly and alone as the contact devices for connecting the conductors leading into the socket to the terminal of a lamp or device in the socket and to the sleeve 3, although it will ordinarily be best to employ the eyelets for the sake of obtaining a larger and better contact.

The socket shown in Figs. 7 and 8 consists of a screw-threaded sleeve 15, into which may be screwed the neck of a lamp having an insulating or other screw-threaded neck and having two terminals directly on the end of the neck, but not having one terminal surrounding the neck in the form of a screw-threaded metal sleeve. The disks 5', 6' corresponding to 5, 6 already described, are formed in the same man-

ner as said latter disks, except that disk 6' is provided with a contact spring 16, adapted to make contact with an edge terminal on the end of a lamp. This contact spring is secured to the disk and to the socket terminal 10', as indicated in Fig. 9, the spring having an end 17 bent at right-angles to the main body of the spring and extending into a hole in the disk to keep the spring from turning, and the eyelet 10' passing through and being riveted to said spring. While a curved spring of the form shown is preferred for the edge contact, it is evidently not essential, all that is necessary being to have a contact extending up from the terminal 10' sufficiently far to co-operate with the terminal on the end of a lamp.

In Fig. 10 the body shown is like that of Fig. 7, except that the upper disk or section is cut away on a chord at one or more points 18, and screws 19 are passed through the lower disk or section for securing the socket to a wall or support. The body rests on a rib 20 in the bell-shaped shell or base, holding it in place when the screws are inserted. The screw-threaded sleeve 21 has an outwardly extending flange 22 at its lower end, which, at points corresponding to 18 of Fig. 11, is bent down as indicated at 23. When the sleeve is placed over the body the ears 23 fit the chords 18 and keep the sleeve from turning when a lamp is unscrewed from the socket. 24 is a screw-threaded ring having a flange 25 adapted to extend over flange 22 and screwing onto the shell.

The socket illustrated in Fig. 13 utilizes the porcelain base 26, forming the main section of the socket body, in lieu of disk 5, holes for the conductors being formed therein out of line with holes in the disk above it, which may be like disk 6'. One such hole (7') only is shown. The screws 27 serve both to secure the base to its support and to secure the ring 28 thereon.

Fig. 14 shows a socket similar to that of Fig. 1. The contact sleeve is, however, not surrounded with a shell. It has a flange 29, over which is an insulating washer 30, and over this a screw-threaded ring 31 adapted to engage with the cap 32, the washer thus serving to insulate the cap and ring from the contact sleeve.

What I claim is—

1. The combination of a disk or plate having a central and an edge metal eyelet or terminal, a second disk or section having holes at different points in it from the eyelets in the first mentioned disk or plate, through which eyelets and holes conductors may be threaded, and means for holding said disks or sections together for clamping the conductors and connecting them to the terminals, substantially as described.

2. The combination of disks connected by means of a pivot pin, holes in said disks at substantially equal distances apart but differently arranged in the two disks through which

conductors may be passed, whereby when the disks are in one position the holes may be brought in line with each other and conductors threaded therethrough, and when the disks are moved to a second position the holes are moved out of line with each other bending and clamping the conductors when placed therein, and means for holding said disks in the second position, substantially as described.

3. The combination, in a socket, of a shell or casing, a socket body consisting of disks or plates having holes in them, which holes are adapted to receive conductors and are so arranged in the several disks as to be out of line with each other when the disks or plates are put together in the socket, substantially as described.

4. The combination, in a socket, of a shell or casing, a socket body consisting of disks or plates having holes in them, which holes are adapted to receive conductors and are so arranged in the several disks as to be out of line with each other when the body is put to-

gether, and metallic eyelets or terminals in the holes of the inner disk, substantially as described.

5. The combination, in a socket, of a screw-threaded sleeve adapted to receive the neck of a lamp or other device, a body consisting of disks or plates having holes through them at different points in the several disks, whereby conductors extending through said holes are caused to pass in zig-zag or circuitous lines, and means for clamping said disks against the lower end of said screw-threaded sleeve, substantially as described.

6. The combination, in a socket, of a shell, a body consisting of several plates through which conductors may pass in circuitous lines, and a cap engaging the shell and clamping said plates, substantially as described.

This specification signed and witnessed this 30th day of July, 1892.

HENRY PRICE BALL.

Witnesses:

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W. E. GILMORE.