

July 12, 1938.

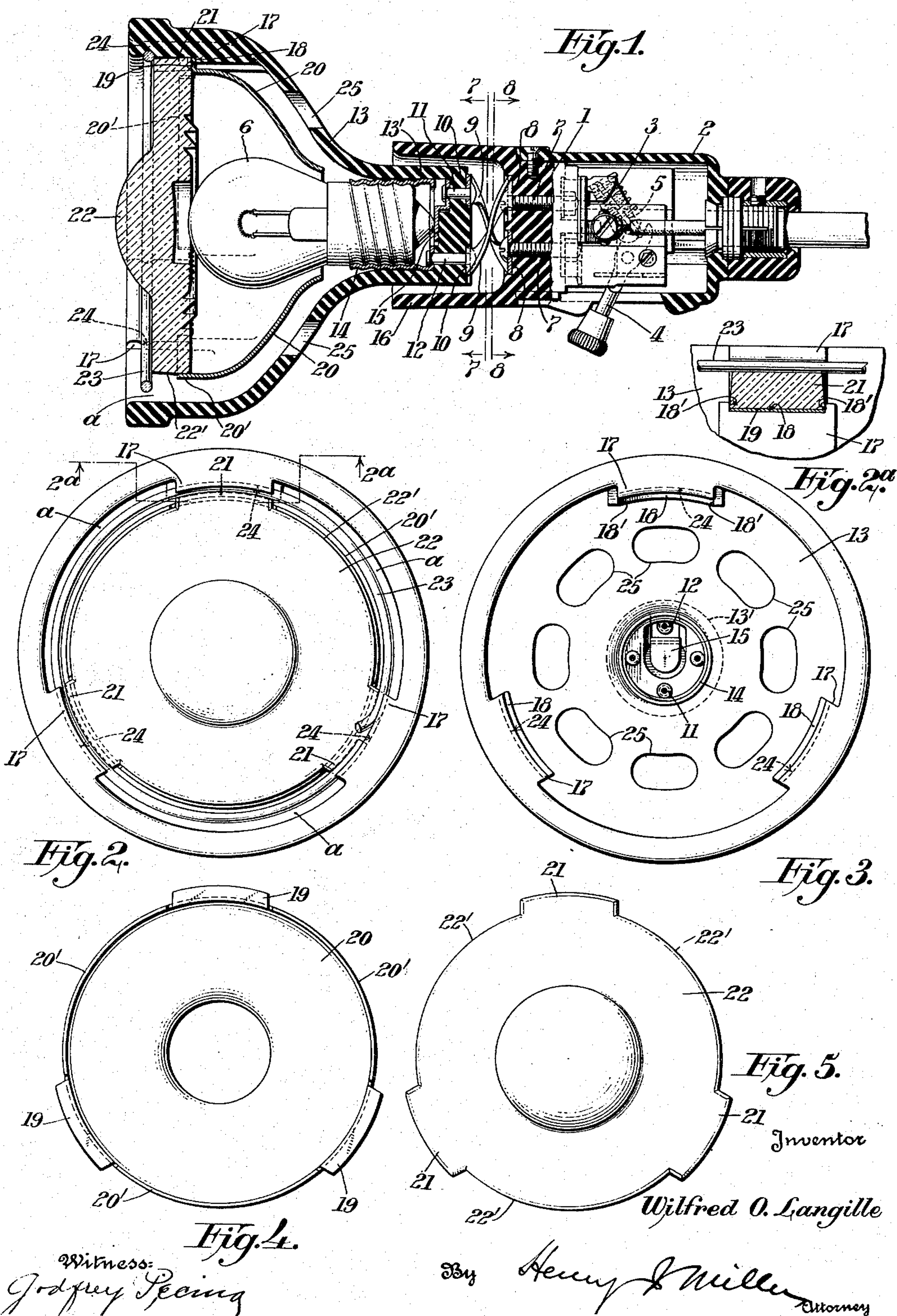
W. O. LANGILLE

2,123,483

SEWING MACHINE LIGHTING FIXTURE

Filed Feb. 20, 1937

2 Sheets-Sheet 1



July 12, 1938.

W. O. LANGILLE

2,123,483

SEWING MACHINE LIGHTING FIXTURE

Filed Feb. 20, 1937

2 Sheets-Sheet 2

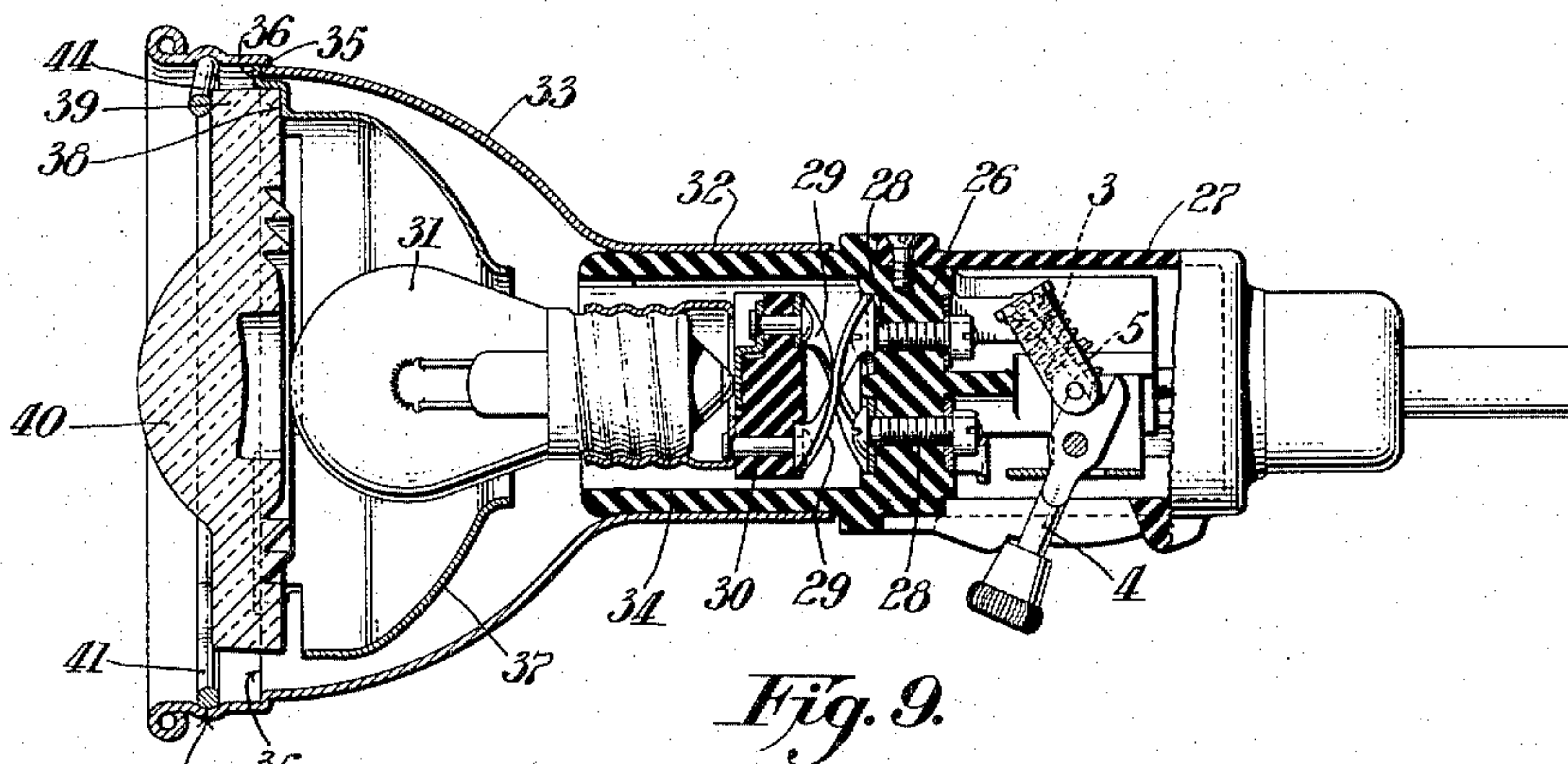


Fig. 9.

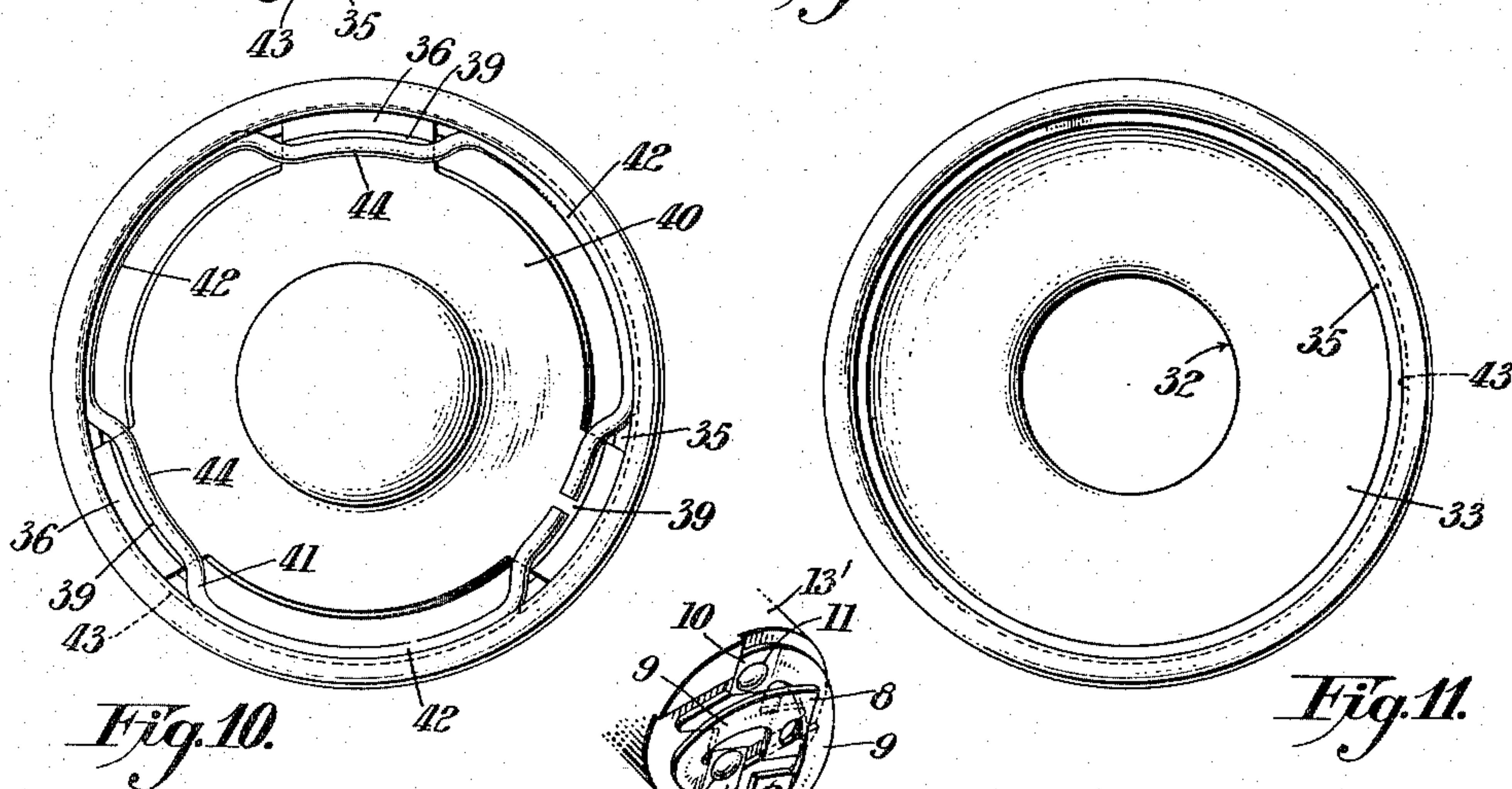


Fig. 10.

Fig. 11.

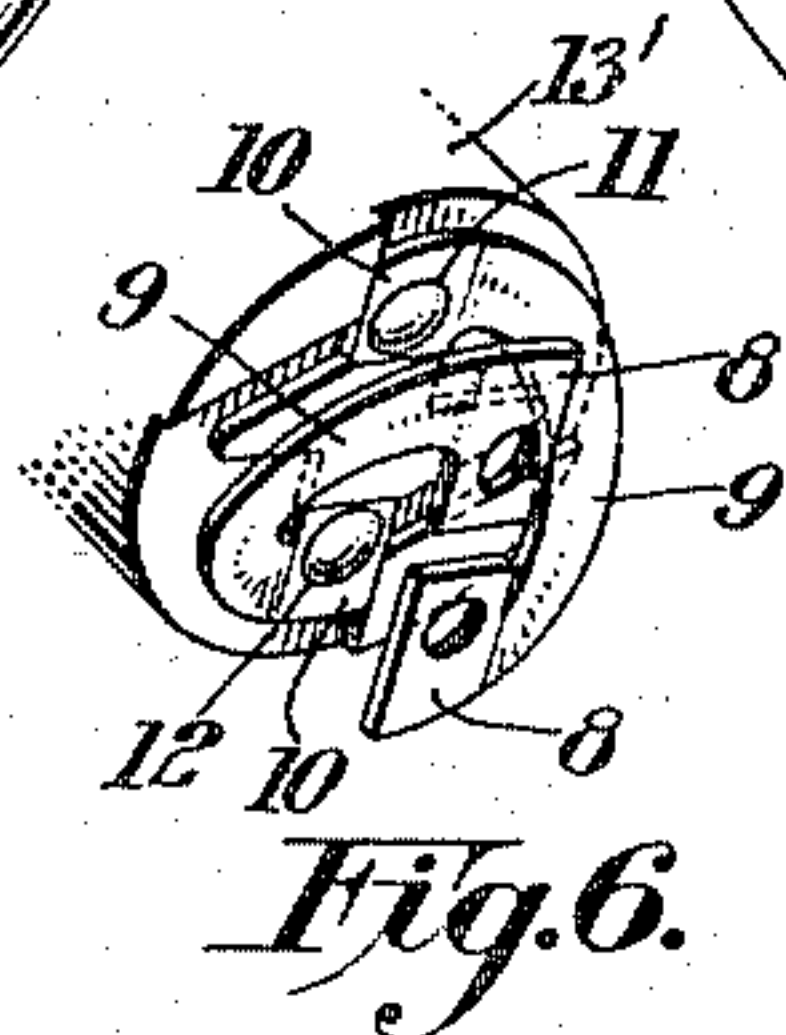


Fig. 6.

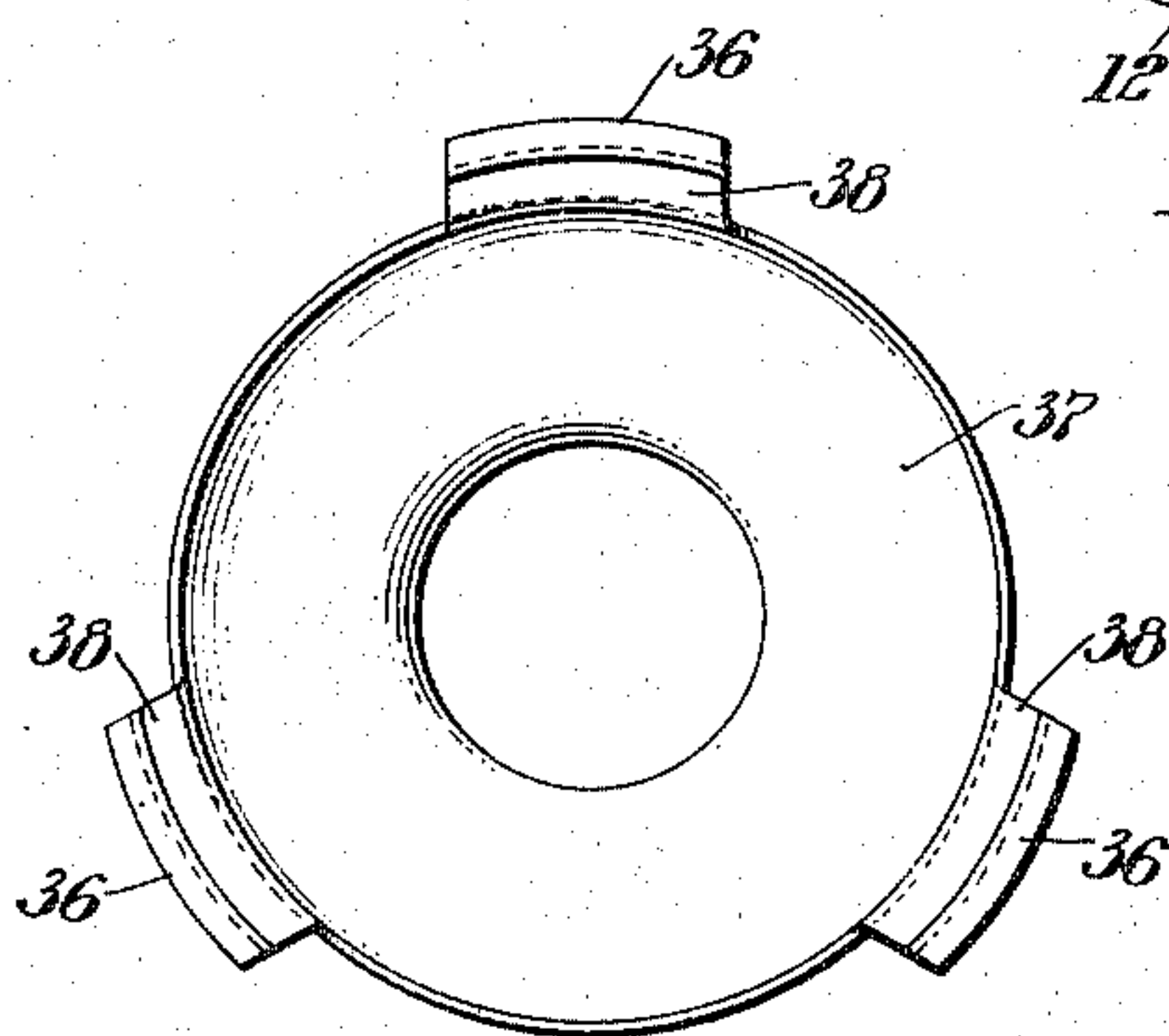


Fig. 12.

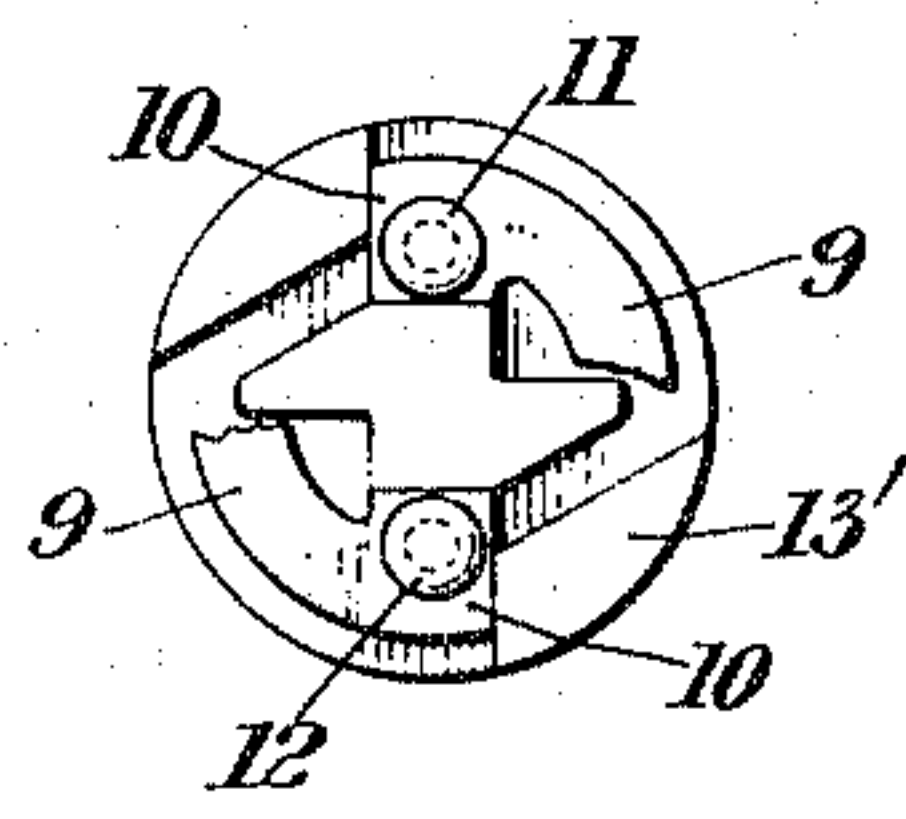


Fig. 7.

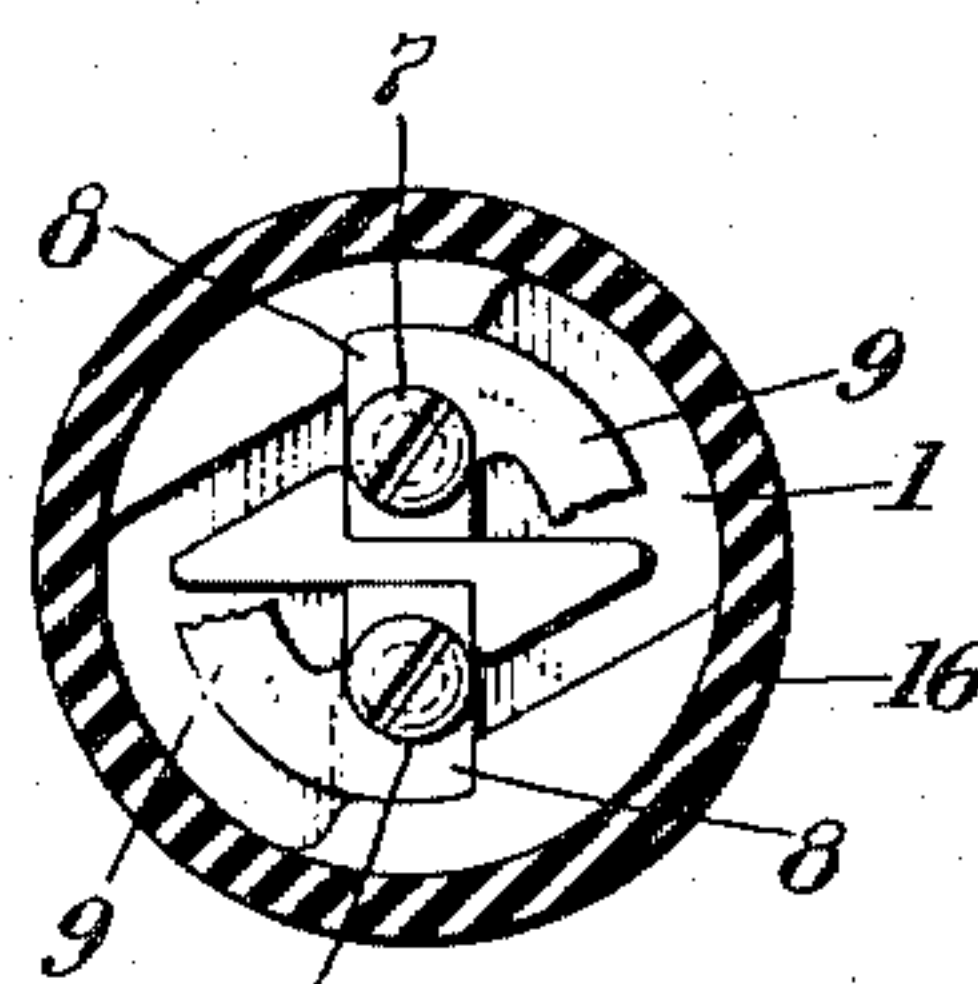


Fig. 8.

Inventor

Wilfred O. Langille

Witness:
Jodrey Peing

By Henry J. Miller

Attorney

UNITED STATES PATENT OFFICE

2,123,483

SEWING MACHINE LIGHTING FIXTURE

Wilfred O. Langille, Chester, N. J., assignor to
The Singer Manufacturing Company, Elizabeth, N. J., a corporation of New Jersey

Application February 20, 1937, Serial No. 126,795

11 Claims. (Cl. 240—90)

This invention relates to electric lighting fixtures, more particularly of the sewing machine illuminating type such as disclosed in U. S. Patent No. 2,067,868, of Jan. 12, 1937, and has for an object to provide simplified and improved means to cushion the electric lamp-bulb so that it will not be subjected to destructive vibration. A further object of the invention is to provide the device with an improved lens and reflector mounting which will prevent overheating of any of the external parts of the fixture likely to be touched by the operator.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations, and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of certain specific embodiments of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

In the accompanying drawings, Fig. 1 is a longitudinal sectional view of a lamp-socket, socket-switch, reflector and shade assembly embodying the invention. Fig. 2 is a left end view of the device shown in Fig. 1. Fig. 2^a is a section on the line 2^a—2^a, Fig. 2. Fig. 3 is a view similar to Fig. 2 with the lens, reflector and lamp-bulb removed to show the shade and lamp-socket only. Fig. 4 is an open-end view of the reflector element only. Fig. 5 is a face view of the lens element. Fig. 6 is a perspective view of the base of the lamp-socket element with its current-conducting suspension springs. Figs. 7 and 8 are sections on the line 7, 7 and 8, 8, respectively, Fig. 1.

Fig. 9 is a longitudinal sectional view of a modification of the invention. Fig. 10 is a left end view of the assembly shown in Fig. 9. Fig. 11 is an end view of the shade element shown in Figs. 9 and 10, and Fig. 12 is an end view of the reflector element shown in Fig. 9.

According to the preferred embodiment of the invention, as illustrated in Figs. 1 to 8, inclusive, the socket-switch comprises a body-member 1 and shell 2 which are preferably molded from "Bakelite" or other similar phenolic condensation material. The portion of the body 1 extending within the shell 2 is preferably constructed substantially in accordance with the disclosure of U. S. Patent No. 1,852,365, of Apr. 5, 1932, and supports a suitable toggle-switch mechanism such as disclosed in said last mentioned patent. Such a toggle-switch mechanism may include the pivotally movable contact-element 3, the pivoted

operating lever 4 and the toggle-thrust member 5 which actuates the movable contact-member 3 to make and break the circuit through the lamp 6.

In the present instance the usual spring-pin socket-terminals are replaced by two current-conducting screws 7, 7 which fixedly bind to the body 1 the ends 8, 8 of the two co-axial edgewise spiraled current-conducting leaf-springs 9, 9 the free ends 10, 10 of which are fixedly secured by rivets 11, 12 to the base of the "Bakelite" molded bell-shaped lamp-receptacle and shade element 13 preferably having within its neck 13' the usual lamp-base screw-shell contact 14 and lamp-base center contact 15 electrically engaged, respectively, by the rivets 11 and 12.

The socket-switch body 1 has a skirt 16 which surrounds and encloses the springs 9 and the neck 13' of the receptacle 13. There is, however, plenty of clearance between the neck 13' and skirt 16 so that the receptacle 13 and all parts carried thereby are free to move resiliently in any direction relative to the socket-switch body 1.

It will be observed in Figs. 1, 6, 7 and 8 that the ends of the springs 9 are squared and are received in squared recesses in the body 1 and neck 13', so that such springs are fixedly anchored at their opposite ends to the body 1 and neck 13' and cannot slip or rotate relatively to their fastening screws 7 and rivets 11, 12.

The receptacle and shade element 13 is formed at 120° spaced points within its rim with inwardly projecting rim-lugs 17, Fig. 3, affording spaced arcuate ledges 18 for the similarly spaced and out-turned rim-flanges 19 of the bell-shaped sheet-metal reflector 20 which are clamped against their respective ledges 18 by the radially projecting edge-tongues 21 of the glass lens 22 held in place by the spring-wire snap-ring 23 received in grooves 24 in the lugs 17. One of the inwardly projecting rim-lugs 17 has at the ends of its arcuate ledge 18 opposed stop-shoulders 18', Fig. 3, which are engaged by one of the out-turned reflector flanges 19 and one of the lens edge-tongues 21, as shown in Fig. 2^a, to prevent rotary slippage of the reflector and lens elements relative to the supporting shade element 13.

The arcuate skirt-portions 20' of the reflector 20, intermediate the out-turned flange-portions 19, overlap and snugly engage the arcuate edge-portions 22' of the lens. This construction closes the mouth of the reflector against ingress of dust and lint which may otherwise settle upon the inner faces of the lens and reflector.

The construction provides adequate ventilation between the shade 13 and reflector 20. Cooling

air currents may enter the three segmental spaces *a*, Figs. 1 and 2, between the rims of the shade 13 and lens 22 and pass between the reflector and shade to the exit holes 25; the lamp fixture being customarily used in an upright position, as shown in said U. S. Patent No. 2,067,868, with the light directed downwardly upon the work. The clamp 40 of the last mentioned patented construction may be sized to fit and applied externally to the skirt 16 of the present socket-switch for the support of the latter.

The combined weight of the lamp 6, shade 13, reflector 20 and lens 22 is carried by the current-conducting springs 9 and the inertia of these several elements combined serves to steady the lamp 6 against vibration; the spring-supported assembly being tiltable in any direction or movable bodily axially relative to the socket-switch body 1. It is, however, firmly supported by the springs 9, alone, against bodily lateral or axial twisting movements.

In the modified form of the device shown in Figs. 9 to 12, both inclusive, the socket-switch body 26 and socket-shell 27 carry the same toggle-switch parts 3, 4 and 5, as shown in Fig. 1. The current-outlet screws 28 and current-conducting spiral springs 29 are of the same construction as the like parts of Fig. 1.

In the present instance, however, the springs 29 support a screw-base type of lamp receptacle 30 which has no shade-element combined with it and carries only the lamp 31. The neck 32 of the sheet-metal shade 33 fits snugly upon the skirt 34 of the body 26 and is formed near its rim with a circular seat 35 for the out-turned 120° spaced rim-flanges 36 of the reflector 37.

The reflector 37 is formed within the flanges 36 with seats 38 for the 120° spaced radial tongues 39 of the glass lens 40 which is held in place by the spring-wire snap-ring 41. This snap-ring is generally circular in form but has three outer segmental portions 42 which are received in the groove 43 of the shade 33 and three inwardly offset segmental portions 44 which bear facially upon the radial tongues 39 of the glass lens 40.

In the modified form of the invention the lamp 31 and receptacle 30 only are supported by the current-conducting springs 29 which may be made correspondingly lighter in weight than the springs 9.

The present construction affords a simple, compact and sturdy yet sensitive shock-absorber for an electric lamp-socket; the lamp being wholly spring-suspended with no contacting rigid elements to transmit vibration from the supporting body to the lamp.

It will be obvious to those skilled in the art that the invention may, without departure from its essential attributes, be embodied in various specific forms other than those shown and described, which latter are to be considered in all respects as illustrative of the invention and not restrictive; reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

Having thus set forth the nature of the invention, what I claim herein is:—

1. In an electric lighting device, a bell-shaped lamp-shade molded from insulating material and formed with neck and rim portions, lamp-base-engaging electrical contacts mounted within said neck-portion, a pair of current-conducting edge-wise spiraled leaf-springs supporting said shade by its neck and each electrically connected with a respective one of said lamp-base-engaging con-

tacts, and means to support and conduct electric current to said springs.

2. An electric lighting device comprising a socket-switch body, a switch mechanism mounted thereon, a socket-shell enclosing said switch mechanism, a pair of outlet current-conductors carried by said body, a pair of co-axial current-conducting spiral leaf-springs connected each to a respective one of said switch-outlet current-conductors, and a lamp-receptacle carried by said springs and having lamp-base-engaging contacts electrically connected respectively to said springs.

3. An electric lighting device comprising a socket-switch body, a switch-mechanism mounted thereon, a socket-shell enclosing said switch-mechanism, a pair of outlet current-conductors carried by said body, a pair of co-axial current-conducting spiral leaf-springs connected each to a respective one of said switch-outlet current-conductors, and a lamp-receptacle carried by said springs and having lamp-base-engaging contacts electrically connected respectively to said springs, said socket-switch body having a skirt enclosing said spiral leaf-springs and spaced from said lamp-base receptacle.

4. An electric lighting device comprising a socket-switch body, a switch-mechanism mounted thereon, a socket-shell enclosing said switch-mechanism, a pair of outlet current-conductors carried by said body, a pair of co-axial current-conducting spiral leaf-springs connected each to a respective one of said switch-outlet current-conductors, a bell-shaped lamp-receptacle and shade element having a neck-portion supported by said springs, and lamp-base-engaging contacts in said neck-portion electrically connected respectively to said springs.

5. An electric lighting device comprising a socket-switch body, a switch-mechanism mounted thereon, a socket-shell enclosing said switch-mechanism, a pair of outlet current-conductors carried by said body, a pair of current-conducting springs connected each to a respective one of said switch-outlet current-conductors, a bell-shaped lamp-receptacle and shade element having a neck-portion supported entirely by said springs, lamp-base-engaging contacts in said neck-portion electrically connected respectively to said springs, and reflector and lens elements carried by said shade.

6. An electric lighting device comprising a socket-switch body, a switch-mechanism mounted thereon, a socket-shell enclosing said switch-mechanism, a pair of outlet current-conductors carried by said body, a pair of co-axial current-conducting spiral leaf-springs connected each to a respective one of said switch-outlet current-conductors, a bell-shaped lamp-receptacle and shade element having a neck-portion supported by said springs, lamp-base-engaging contacts in said neck-portion electrically connected respectively to said springs, said shade having circumferentially spaced inwardly projecting rim-lugs, and reflector and lens elements seated upon said rim-lugs and spaced from said shade.

7. In an electric lighting device, a bell-shaped lamp-shade having a rim-groove and a rim-seat, a bell-shaped reflector having circumferentially spaced out-turned rim-flanges in engagement with said rim-seat, a lens element seated upon said reflector and peripherally spaced from said shade, and a wire snap-ring engaging said lens and seated in said rim-groove.

8. A supporting body of molded electrical insulation material, a pair of current-conductors

5 fixedly mounted therein, a lamp-receptacle hav-
ing a body of molded electrical insulation ma-
terial and lamp-base-engaging contacts carried
thereby, and a pair of sheet-metal current-con-
ducting leaf-springs of edgewise spiraled form
each fixed at one end to said supporting body and
to a respective one of said current-conductors
therein and each fixed at its opposite end to the
10 body of said lamp-receptacle and to a respective
one of said lamp-base-engaging contacts carried
thereby.

15 9. In a lighting device, a bell-shaped sheet-
metal reflector having at the rim of its skirt arcu-
ate edge-portions and out-turned rim-flanges, a
lens having arcuate edge-portions and radial
edge-tongues projecting outwardly beyond its ar-
cuate edge-portions and disposed in juxtaposi-
tion with the out-turned rim-flanges of said re-
flector, and a bell-shaped supporting shade hav-
ing seating means within its rim for said reflector
rim-flanges and lens edge-tongues, there being
20 arcuate ventilating openings between said shade
and the arcuate edge-portions of said lens and
reflector.

25 10. In a lighting device, a bell-shaped sheet-
metal reflector having at the rim of its skirt

arcuate edge-portions and out-turned rim-
flanges, a lens having arcuate edge-portions and
radial edge-tongues projecting outwardly beyond
its arcuate edge-portions and disposed in juxta-
position with the out-turned rim-flanges of said 5
reflector, and a molded bell-shaped supporting
shade of electrical insulation material having a
neck-portion fitted with lamp-base-engaging
electrical contacts and a rim-portion formed with
seating means for said reflector rim-flanges and 10
lens edge-tongues, there being arcuate venti-
lating opening between said shade and the arcu-
ate edge-portions of said lens and reflector.

11. In an electric lighting device, a lamp-base
receptacle having an insulating body and lamp- 15
base-engaging contacts carried thereby, a pair of
coaxial spiral springs each formed as an edge-
wise spiraled flat strip of spring metal and each
fixedly anchored at one end to said insulating
body and electrically connected to a respective 20
one of said lamp-base-engaging contacts, a sup-
porting body to which the other end of each of
said springs is fixedly anchored, and current-sup-
ply means electrically connected to said springs.

25 WILFRED O. LANGILLE.