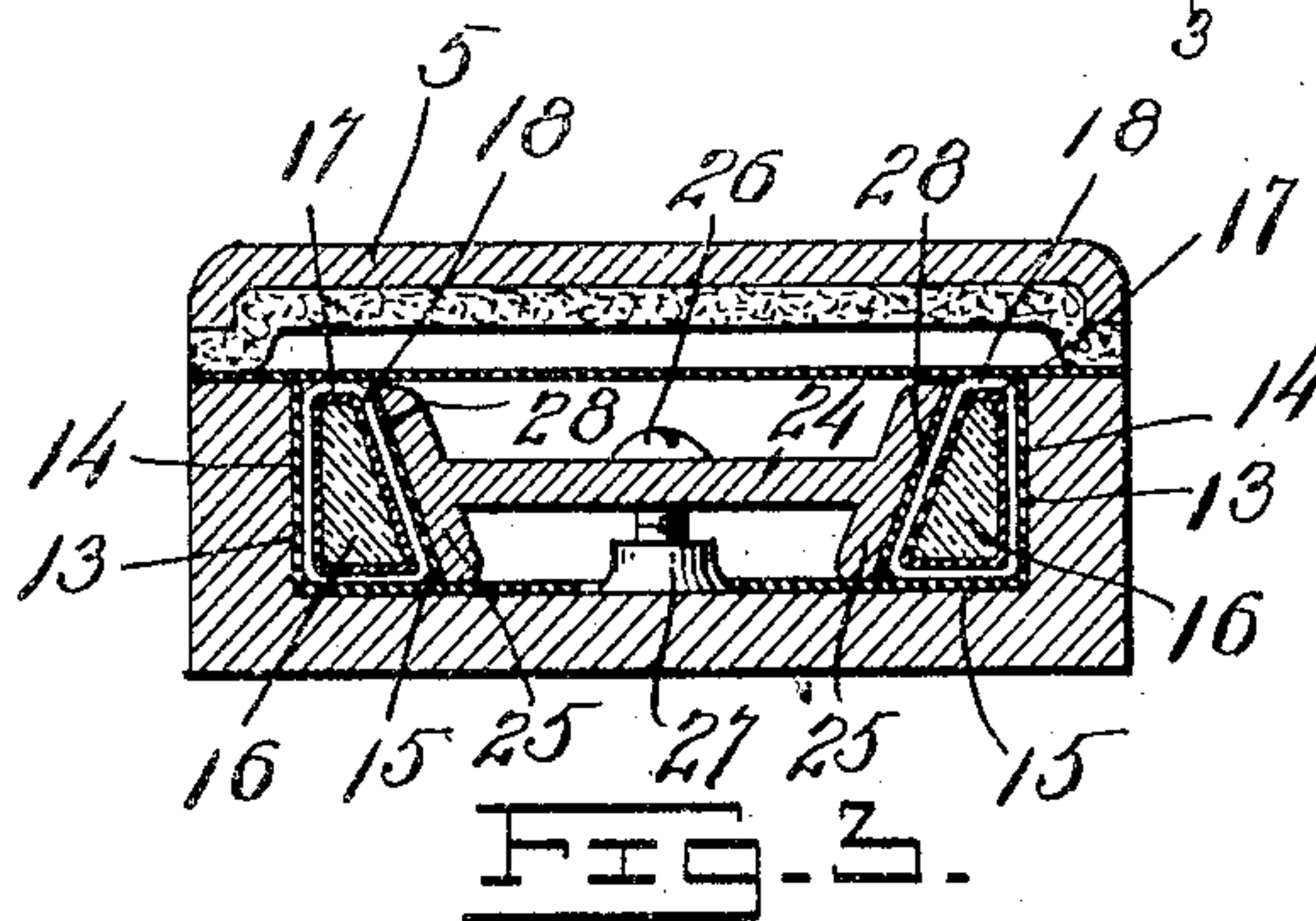
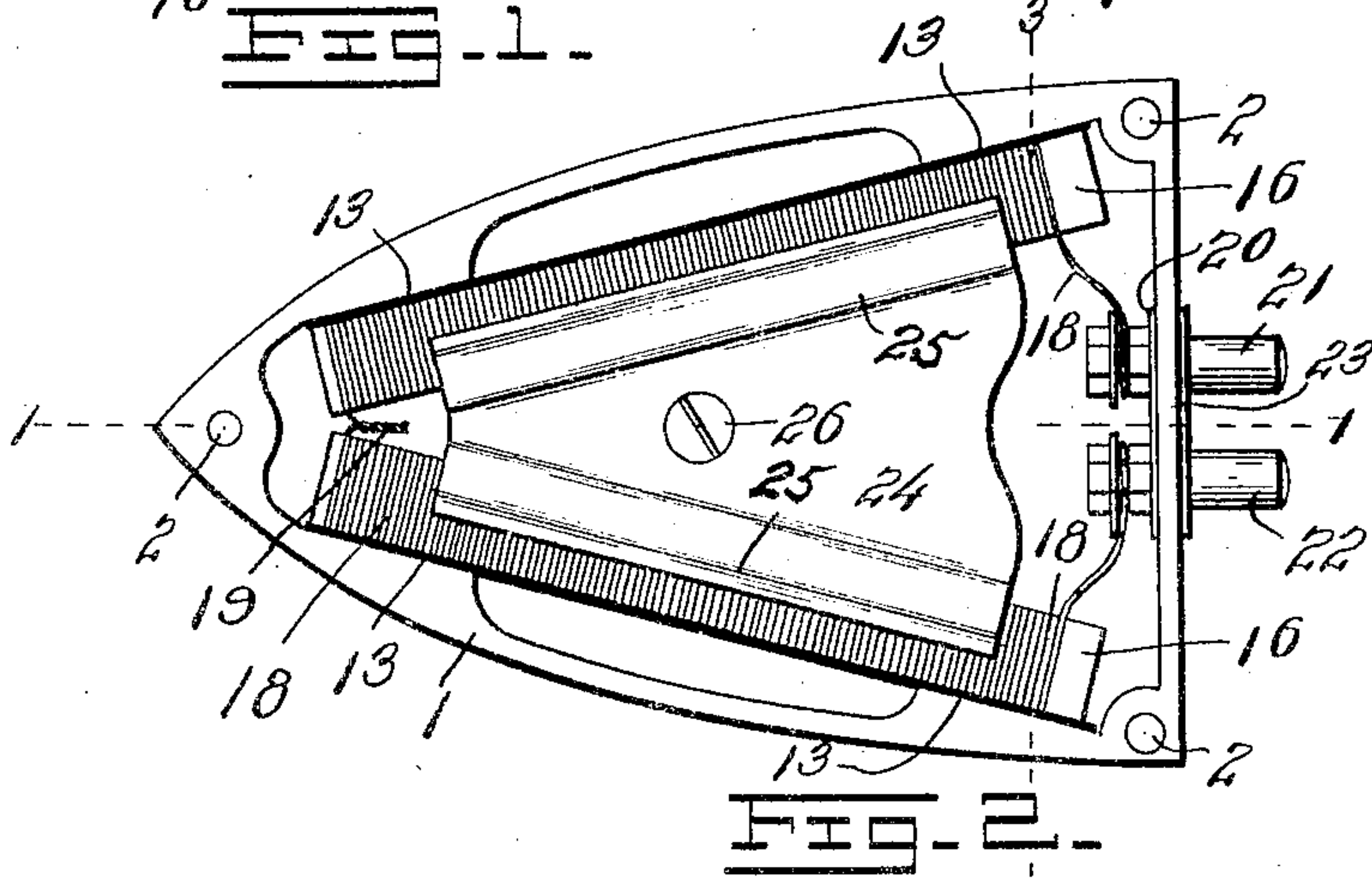
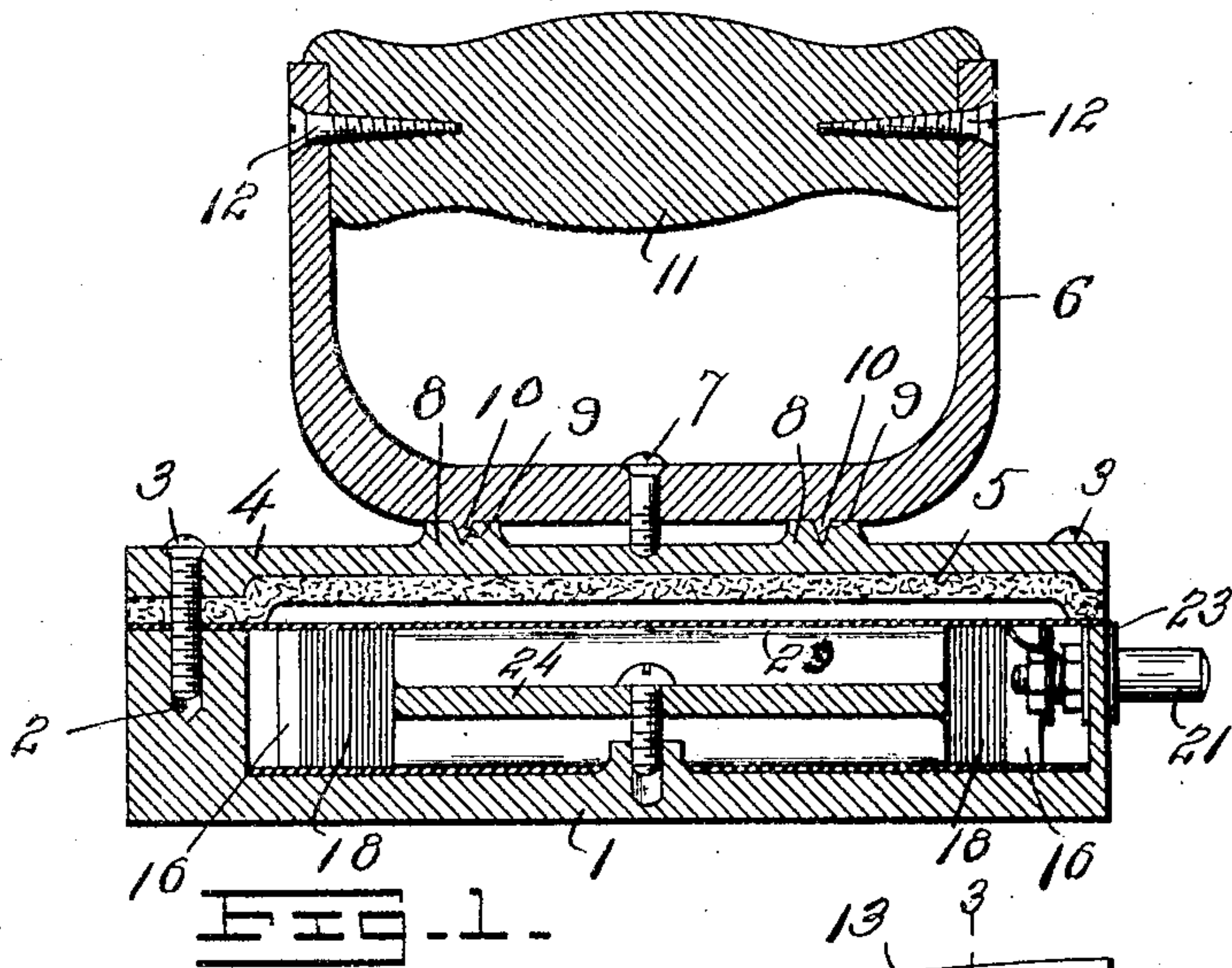


No. 876,639.

PATENTED JAN. 14, 1908.

W. M. HARWOOD.  
ELECTRIC SAD IRON.  
APPLICATION FILED MAY 27, 1907.



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# UNITED STATES PATENT OFFICE.

WILLARD M. HARWOOD, OF ONTARIO, CALIFORNIA.

## ELECTRIC SAD-IRON.

No. 876,639.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed May 27, 1907. Serial No. 375,911.

*To all whom it may concern:*

Be it known that I, WILLARD M. HARWOOD, a citizen of the United States of America, and resident of Ontario, in the county of San Bernardino, in the State of California, have invented certain new and useful Improvements in Electric Sad-Irons, of which the following is a specification.

This invention relates to certain new and useful improvements in electric heaters, or electrically heated apparatus, and while designed primarily for sad irons, it is evident that the same principle may be employed in other electrically heated devices, among which may be named stoves and soldering irons. The present description will however be confined to a sad iron.

The invention has for its objects among others to provide an improved device of this general character in which provision is made for the direct conveyance of more heat to the toe and heel of the iron than to the sole, because the toe first comes in contact with the wet cloth and, being exposed, radiates heat faster than the sole. I aim to thus furnish the necessary extra heat to the toe and heel and still maintain the sole at a uniform temperature. By providing for direct radiation from the core to the toe and heel the iron can be maintained at a working temperature with a smaller consumption of current than where the radiation is less direct.

I aim further at simplicity in construction, ready assemblage of the parts and more satisfactory results in use.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which

Figure 1 is a substantially central vertical longitudinal section through my improved sad iron, as on the line 1—1 of Fig. 2. Fig. 2 is a top plan with the cover removed, showing the interior. Fig. 3 is a vertical cross section as on the line 3—3 of Fig. 2.

Like numerals of reference indicate like parts throughout the several views.

Referring to the drawings 1 designates the body of the iron having screw threaded openings 2 to receive the screws 3 which serve to removably retain in position the cover 4, upon the under side of which is a

sheet of non-heat conducting material 5 as seen best in Fig. 1.

6 is a bail secured to the cover by suitable means as a screw 7, said cover being shown as provided, upon each side of the said screw, with a raised portion 8 having a depression 9 into which are received the projections or points 10 on the under side of the bail as shown in Fig. 1 to steady the bail. A suitable handle 11 is secured to this bail by suitable means, as the screws 12, see Fig. 1.

The body 1 is chambered as shown and is provided upon its side walls with flat surfaces 13. Upon these flat surfaces, and also upon the bottom of the body are placed thin strips of insulating material 14 and 15 respectively as seen best in Fig. 3, to prevent contact of the wire of the cores with the body of the iron.

The heating element consists of the two cores 16, 16 each of which is wound or covered with a thin sheet of insulating material 17, as mica. Wound upon this mica is a wire 18. The wires of the two cores are connected, as by twisting together as seen at 19 near the toe as shown in Fig. 2. The rear ends of these wires are suitably connected to the binding posts 21 and 22, as seen best in Fig. 2, which binding posts are insulated from the body of the iron through which they pass, by the mica washers 20 and 23 as seen in Fig. 2. The cores are by preference of substantially triangular shape as seen in Fig. 3.

The heaters or cores are held in place detachably by means of the plate or bar 24 having the inclined side portions 25 forming a wedge which bears at its sides against the cores and forces them against the flat sides and bottom of the iron body, as will be best seen from Fig. 3, the said plate or bar being held in place by a screw 26 engaging a screw threaded socket in the boss 27 on the inner wall of the bottom of the iron.

28 is insulating material placed between the sides of the wedge and the wires of the heaters.

29 is a sheet of insulating material above the heaters and held in place by the cover, the asbestos layer 5 resting upon this sheet of insulating material as seen in Figs. 1 and 3.

In use, the electrical connections being made with the binding posts in the usual manner, the current passes through the resistance wires 18 and the heat generated is



radiated through the mica strips covering the wire to the bottom and flat portions of the body. Thus the sole is heated to a uniform temperature throughout, while the toe and heel portions receive a greater percentage of the heat by means of the extra contact along the flat portions of the sides. The cores are wound practically the whole length so as to bring the resistance wires as near the point of the iron as possible as well as to the heel, and direct radiation of the heat to those parts assured.

The above construction embodies the acme of simplicity and no machine work is required to obtain contact between the heaters and the body of the iron, and while the structural embodiment of the invention as hereinbefore described is what I, at the present time, consider preferable, it is evident that the same is subject to changes, variations and modifications without departing from the spirit of the invention or sacrificing any of its advantages; I therefore do not intend to restrict myself to the exact details, proportions of parts or other mechanical features, but reserve the right to make such changes, variations and modifications as come properly within the scope of the protection prayed as stated in the appended claims.

What is claimed as new is:—

1. In a device of the character described, a body, heaters therein and loosely supported and disconnected from said body and extending substantially to the toe and constructed to radiate the heat directly to the toe and heel of the body and means independent of the cover and detachably secured to the bottom for holding said heaters in place.

2. In a device of the character described, a body, cores therein, insulating material covering the cores and wires wound upon said insulation and extending substantially the entire length thereof to bring the same well into the toe of the body and means connected to the bottom of the body and pressing laterally against said cores to keep them in place.

3. In a device of the character described, a chambered body, heaters therein, and a wedge interposed between said heaters for holding said heaters against the sides and bottom of the chamber of the body.

4. In a device of the character described, a chambered body, cores wound with insulating material and wire disposed within said body, insulating material between the cores and the walls of the body, and an insulated wedge securing device interposed between said cores and secured to the bottom of said body for holding the cores in place.

5. In a device of the character described, a chambered body, cores therein wound substantially their whole length, insulation between the wires and the cores and between the wires and the walls of the body, and a removable wedge interposed between said cores and secured to the bottom of said body for holding the cores in place and for forcing the cores upon the bottom and sides of the body.

6. An electric sad iron comprising a chambered body, cores therein extending into the toe, a wedge for forcing the cores upon the bottom and sides of the body, insulation between the cores and wedge and between the cores and the sides and bottom of the body, a cover, and insulating material between the same and the cores.

7. An electric sad iron, comprising a chambered body, cores therein extending into the toe and contacting with the side walls of the chamber of the body, means for forcing the cores against the sides and bottom of the chamber, insulation between the cores and securing means and between the cores and the walls and bottom of the chamber, an insulating strip over the cores, a cover, and a non-conducting strip between the same and said insulating strip.

Signed by me at Ontario Cal. this 23 day of May 1907.

WILLARD M. HARWOOD.

Witnesses:

J. C. HARWOOD,

EVELYN A. HARWOOD.