

917,053.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

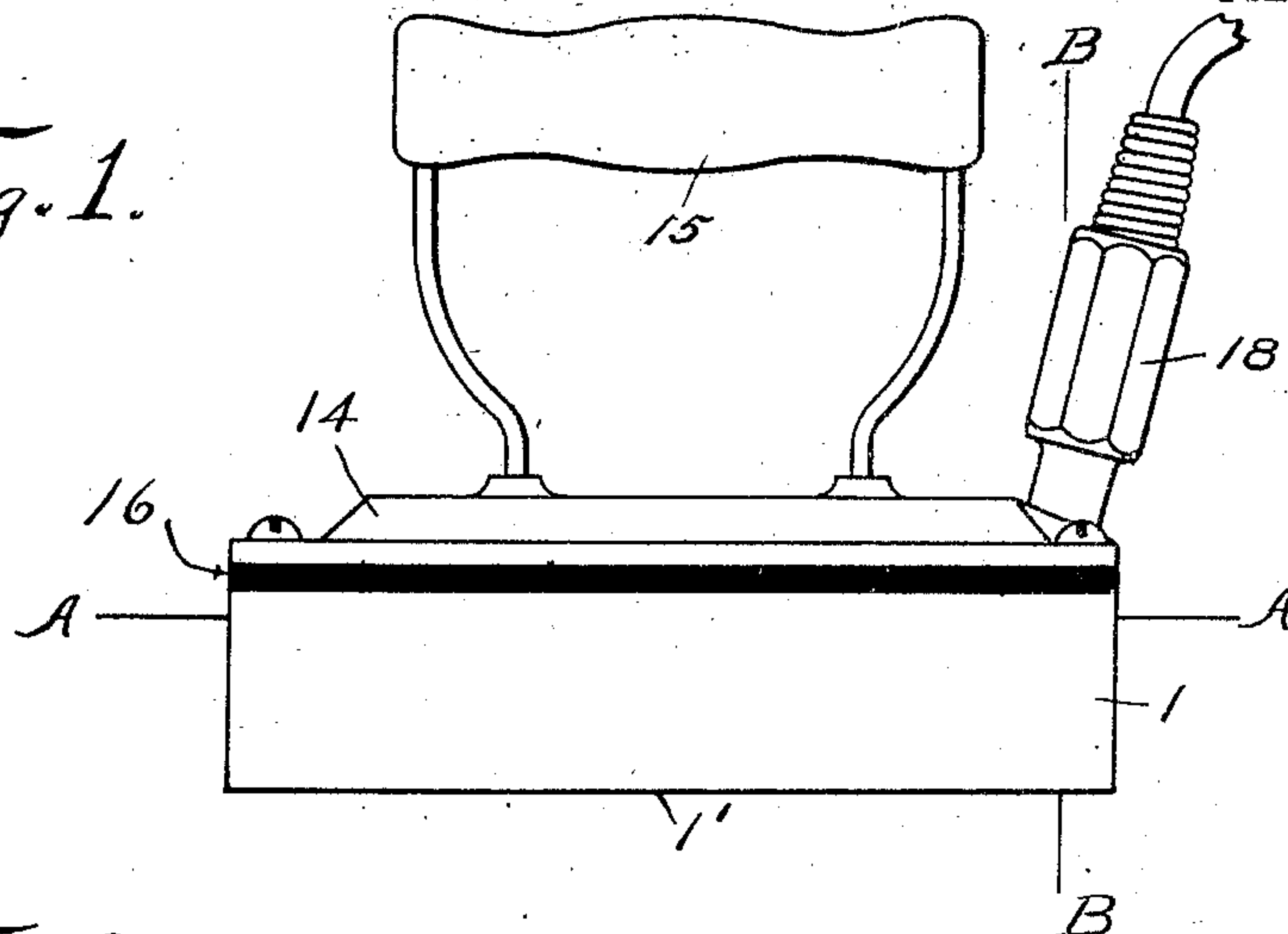


Fig. 2.

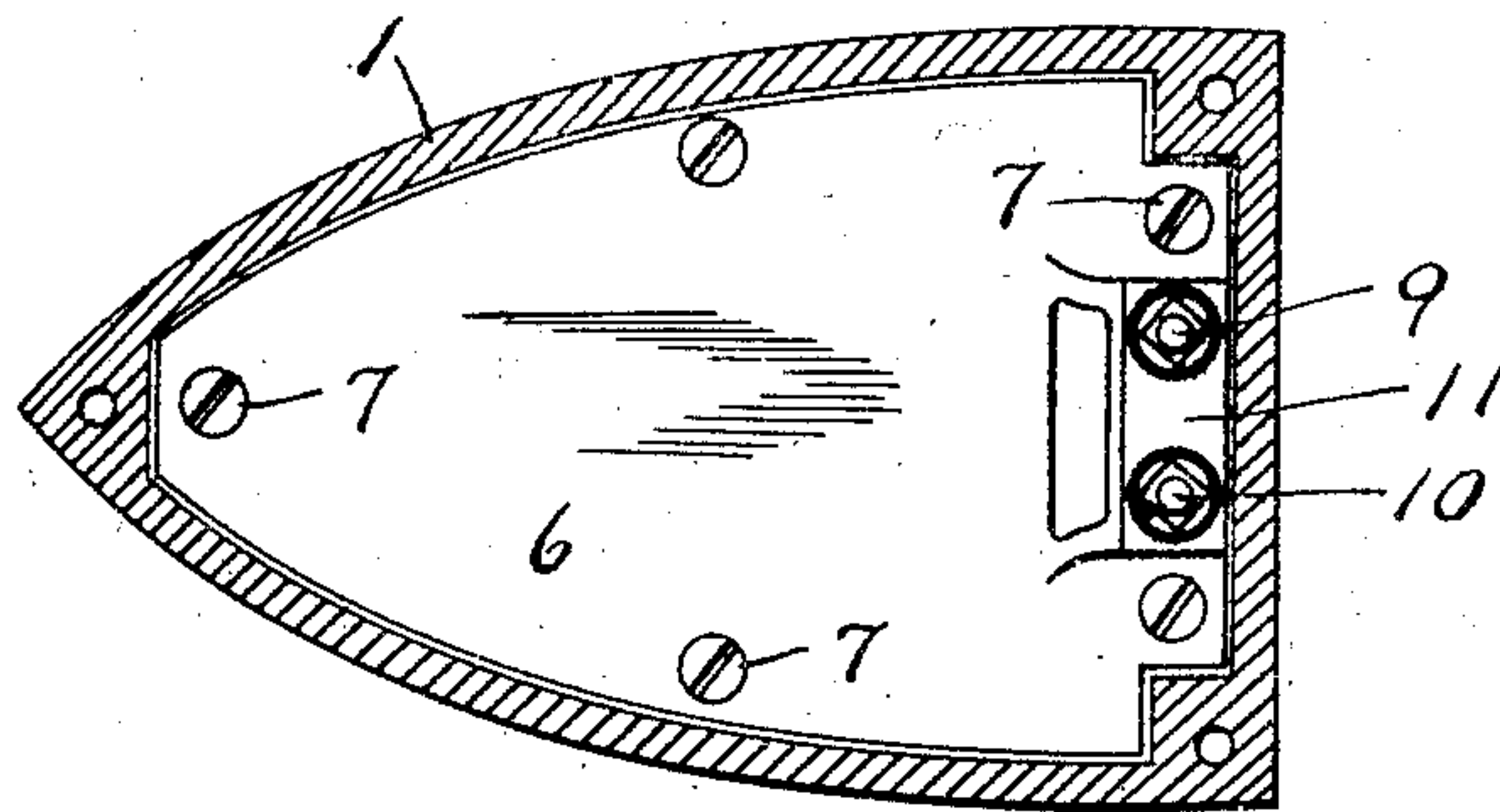


Fig. 3.

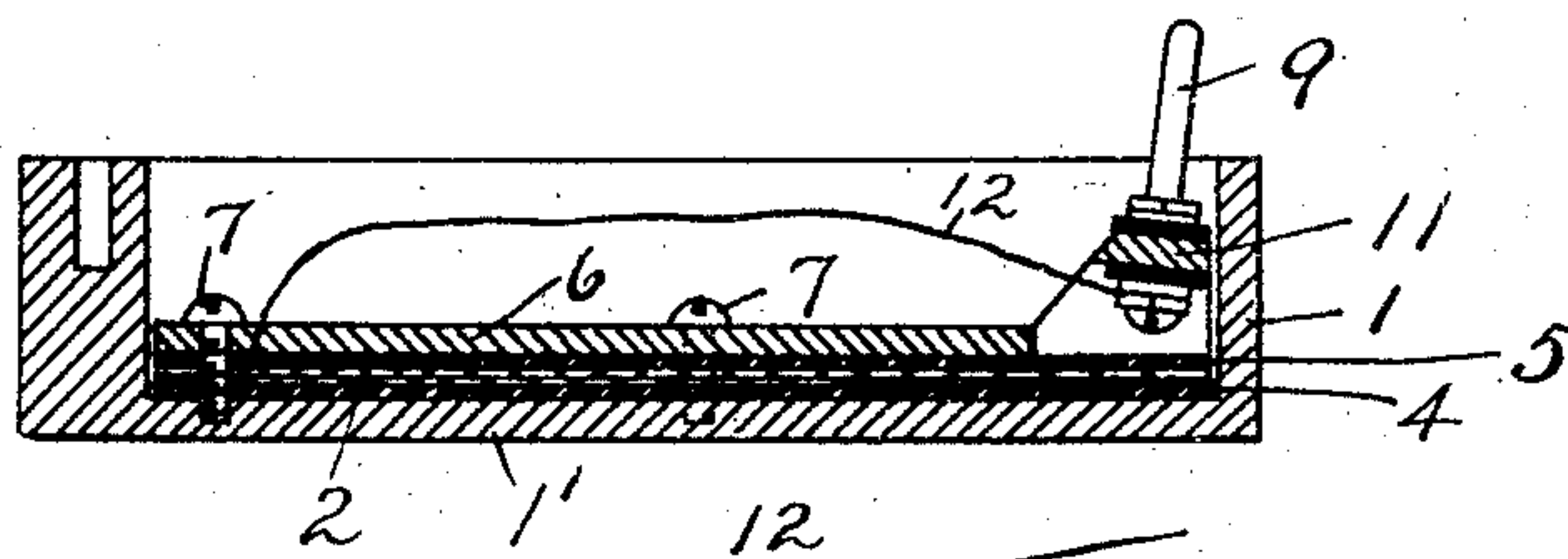
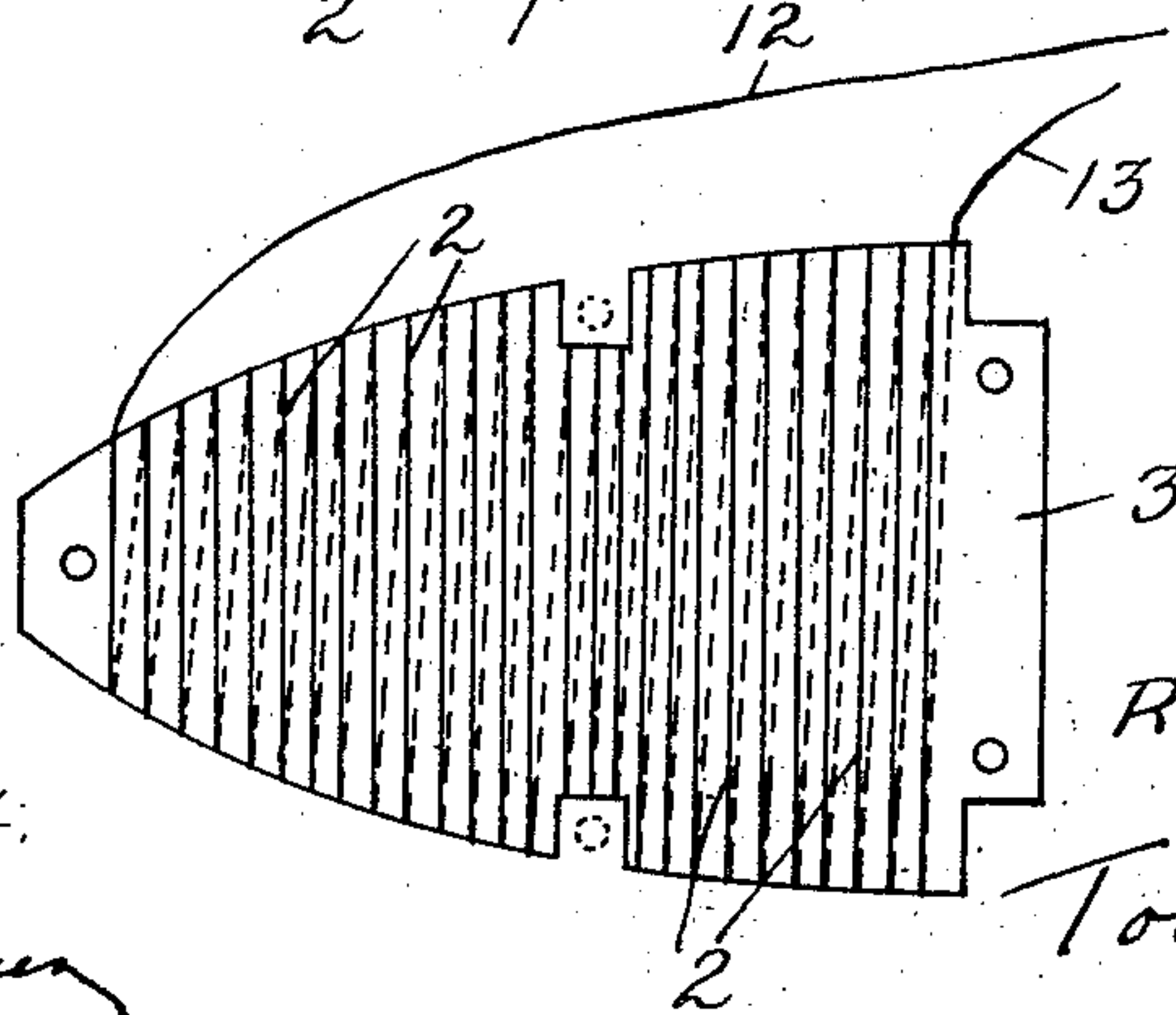


Fig. 4.



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917,053.

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2 SHEETS—SHEET 2.

Fig. 5.

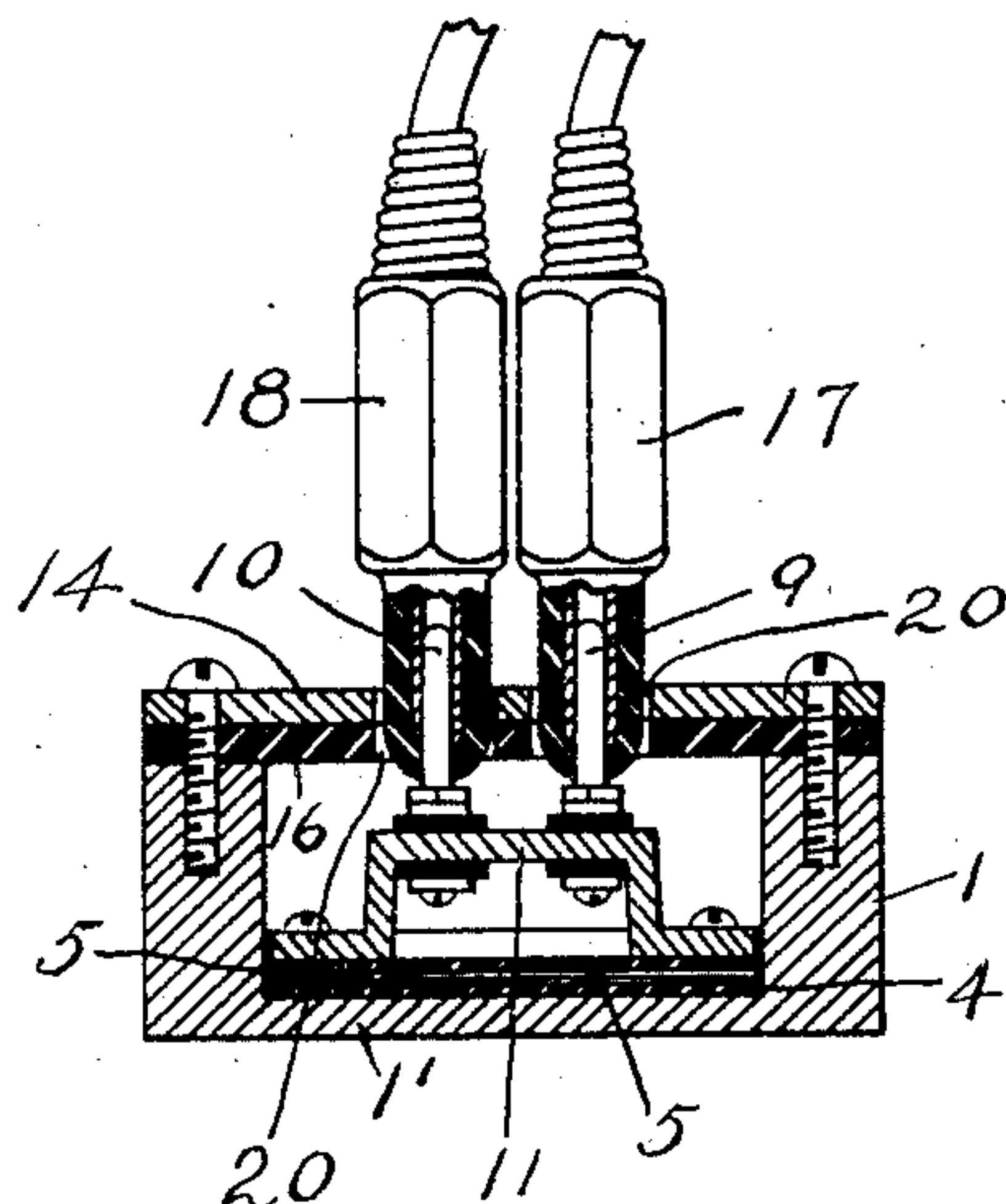


Fig. 6.

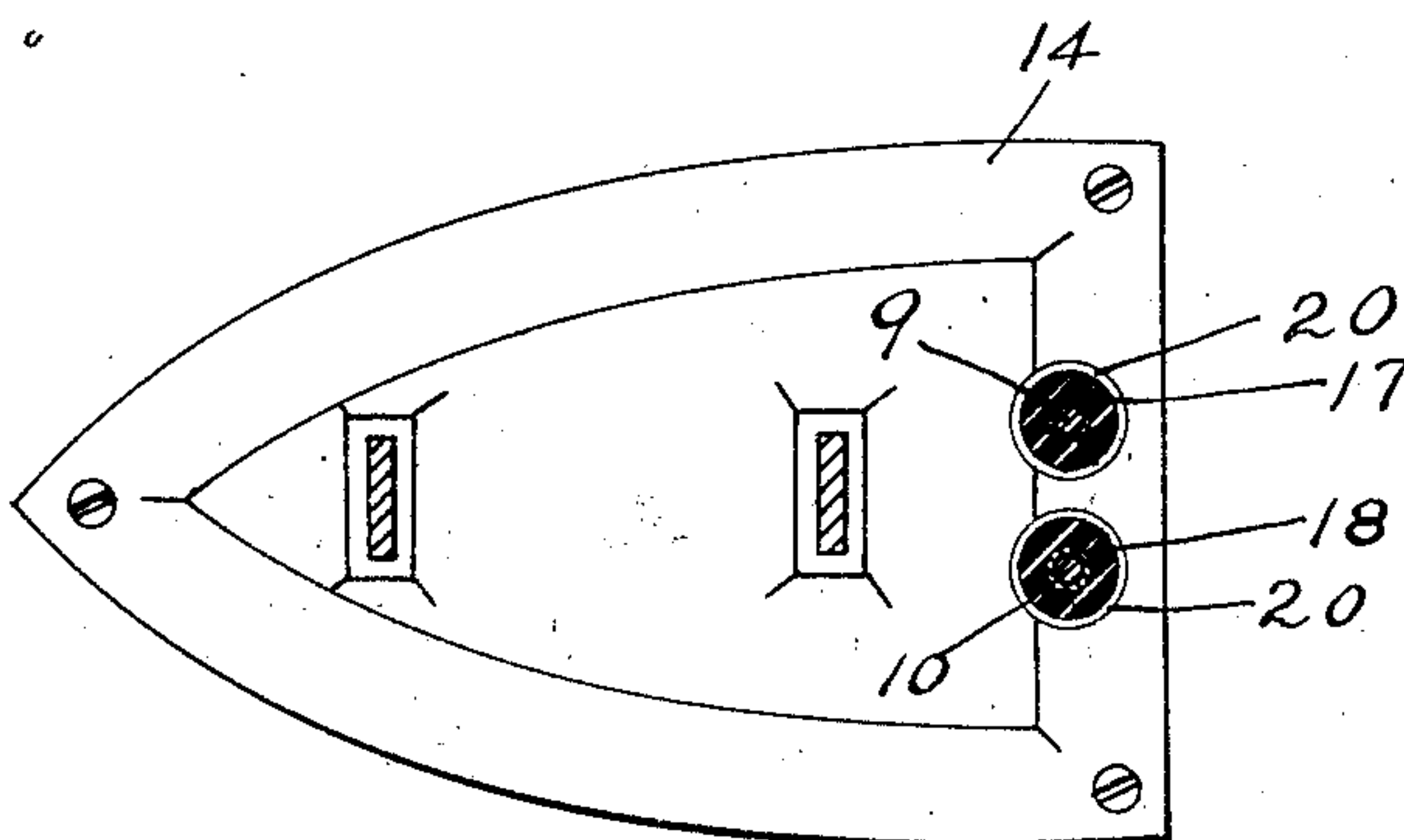
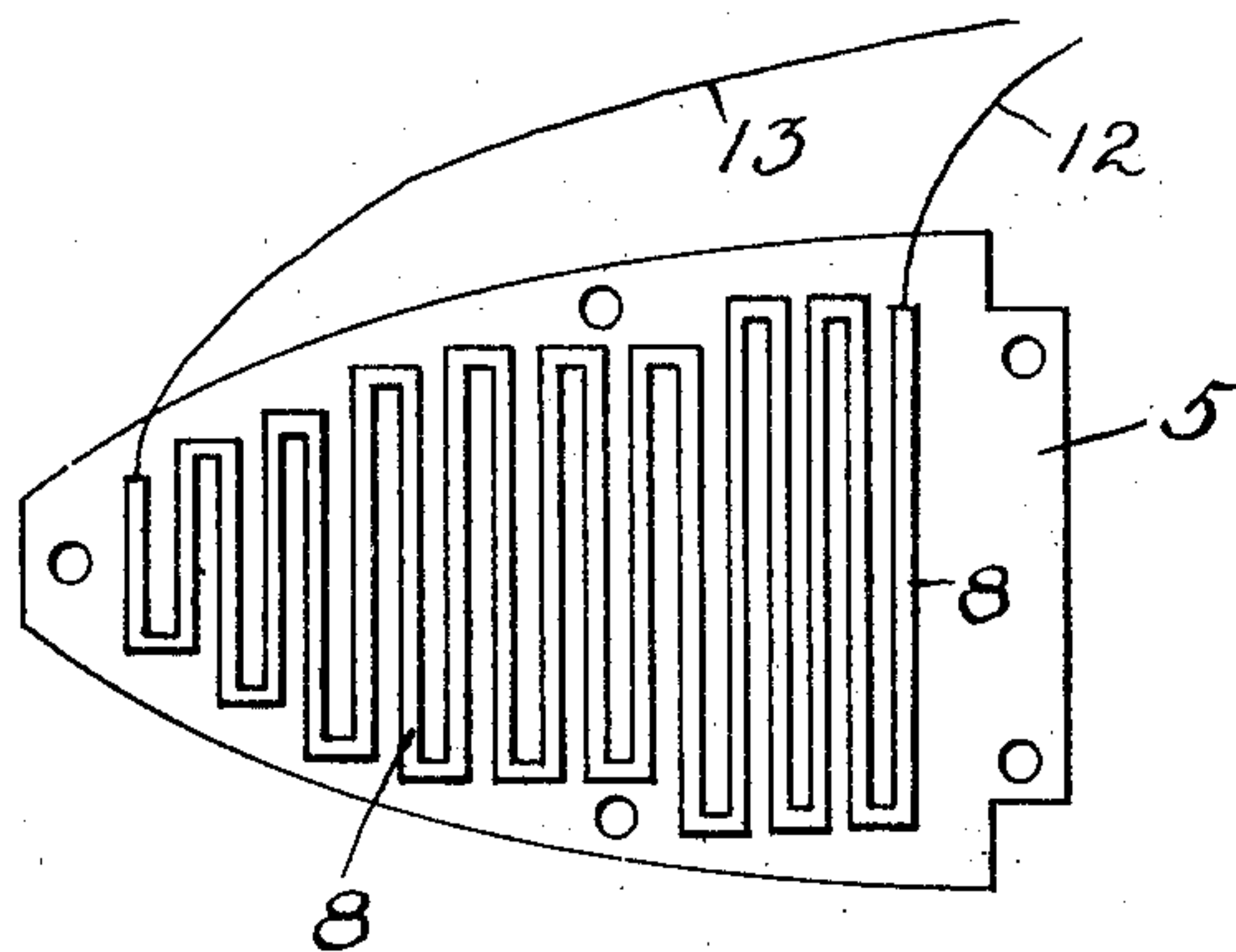


Fig. 7.



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ROBERT LEE HAILEY, OF NEW YORK, N. Y., ASSIGNOR TO THE LOWE ELECTRIC CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ELECTRIC HEATER.

No. 917,053.

Specification of Letters Patent.

Patented April 8, 1909

Application filed June 11, 1908. Serial No. 437,820.

To all whom it may concern:

Be it known that I, ROBERT LEE HAILEY, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Electric Heaters, of which the following is a specification.

My invention relates to improvements in electric heaters and more particularly to such apparatus as embodied in a smoothing iron in which an electric current is caused to flow through high resistance material to heat the bottom plate of the iron or other heat conducting and radiating surface.

The main object of my invention is to rapidly conduct the heat from the resistance material to the plate or object to be heated and has for a further object to simplify and cheapen the cost of construction of electrically heated smoothing irons.

My invention consists in the novel parts, combinations of parts and details of construction hereinafter more particularly described and then specified in the claims.

In the accompanying drawings, Figure 1 is a side elevation of one form of device having my invention applied thereto. Fig. 2 is a horizontal section taken on the line A, A Fig. 1. Fig. 3 is a vertical-longitudinal section through the device shown in Fig. 1. Fig. 4 is a plan illustrating the preferred manner of constructing the heat generating element detached from its attendant parts. Fig. 5 is a transverse vertical section taken on the line B, B. Fig. 1. Fig. 6 is a plan and partial section of the device illustrated in Fig. 1. Fig. 7 is a plan of a modified form of heating element.

In the preferred adaptation of my invention as illustrated in the accompanying drawings, 1 indicates a trough shaped body of metal having vertical side walls and a flat plate 1' forming the bottom and which constitutes the heat conducting or radiating element. To the inner surface of this bottom plate is clamped or bolted the heat generating or resistance material as presently described. The heat generating element proper consists preferably of a high resistance wire 2 wound around a thin plate of mica 3 preferably by threading it in slits in the edge of the mica plate when passing around the same and by this construction the individual turns of wire are prevented from coming in

contact with each other and becoming short-circuited. (See Fig. 4.) A plate or sheet of thin mica 4 is placed upon the bottom 1' of the body or trough 1 and upon which the heating element consisting of the resistance wire 2 and mica plate 3 is placed. Superimposed upon the heating element is another thin sheet of mica 5 and on top of the plate 5 is a clamping plate 6 through which screws 7 pass and firmly fasten or clamp the plate 6 and intermediate layers to the heat radiating plate 1'. Thus the resistance material 2 is firmly clamped in close contact with the radiating plate 1', and the heat is readily conducted from the wire 2 to the plate 1' and radiates to the atmosphere and thereby avoids excessive heating of the wires 2.

Instead of using the wire 2 wound around the mica plate for the heating element, a zig-zag strip of metal or wire might be employed as illustrated in Fig. 7. This resistance material 8 might be a strip of metal bent back and forth, or it might be stamped from a single plate of metal and is located and clamped in the heater between the mica plates 4 and 5. Terminal posts 9, 10 are mounted upon but insulated from a raised platform 11 secured to the plate 6 and each connected to one end of the resistance material by wires 12 and 13 and thus form the electrical circuit. A cover plate 14 provided with the usual handle 15 rising therefrom is secured to the body portion or heating chamber 1 and has preferably interposed between it and the walls of the heating chamber a plate of relatively poor heat conducting material 16 such as asbestos. It will be noted that the heating element by this construction is extremely small and thereby a large air space is left between the top of the same and the cover plate which prevents the upper part of the iron becoming excessively hot. The terminal posts 9 and 10 pass up through enlarged openings 20 in the asbestos plate 16 and cover plate 15 the exposed ends being spindle-shaped so that slip connectors 17, 18 may be readily attached and detached. The connectors might be of any suitable form and are connected to the source of electrical supply by wires as usual in the art and are protected by an insulating thimble such as porcelain. When applied to the terminals, the porcelain thimble is permitted to pass down through the

openings 20 in the plates 14 and 16 and thus thoroughly protect the iron proper from coming in contact with the thimble.

What I claim as my invention is:—

- 5 1. In an electrically heated smoothing iron, the combination of a trough-shaped body, provided with a bottom plate forming a heat-radiating element, a single layer
10 of resistance wire clamped to said bottom plate, a thin sheet of insulation interposed between said resistance wire and said bottom plate, a metallic plate above said resistance wire, insulated therefrom and forming a clamping plate, terminal posts in
15 electrical connection with said resistance wire and mounted on said clamping plate and a cover secured to said trough provided with openings through which the terminal posts are adapted to pass.
- 20 2. An electrically heated smoothing iron comprising a trough-shaped body portion provided with a bottom plate forming a heat-radiating element, a single layer of

resistance wire clamped to said bottom plate, a thin sheet of insulation interposed between 25 said resistance material and said bottom plate, a metallic plate above said resistance material, insulated therefrom and forming a clamping plate, terminal posts in electrical connection with said resistance material and 30 mounted on said clamping plate a cover secured to said trough provided with openings through which the terminal posts are adapted to pass and means adapted to enter said openings and to connect said posts to 35 the source of electric energy whereby said posts will be insulated from said cover, substantially as and for the purpose described.

Signed at New York in the county of New York and State of New York this sixth day 40 of June 1908.

ROBERT LEE HAILEY.

Witnesses:

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