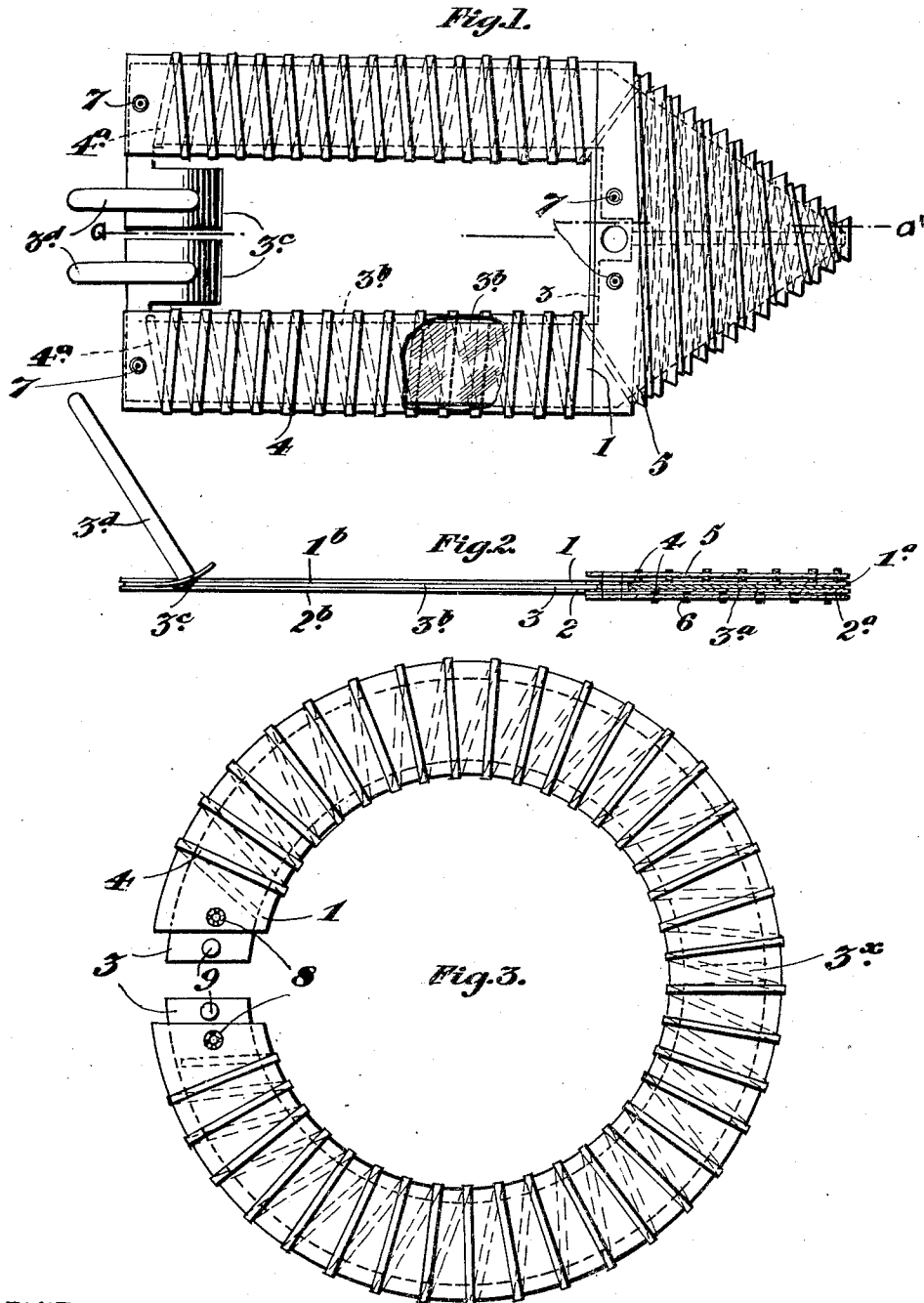


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ELECTRIC HEATING ELEMENT.
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1,014,875.

Patented Jan. 16, 1912.



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UNITED STATES PATENT OFFICE.

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ELECTRIC HEATING ELEMENT.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK ERNE HEWITT, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Electric Heating Elements, of which the following is the specification.

My invention relates to improvements in electric heating elements, and the object of the invention is to devise a simple and efficient element and one in which the current consumption will be less than in the forms of electric heating elements used in conjunction with electric utensils at present on the market.

A further object is to construct an element which will not be liable to short circuit and which may be cheaply constructed.

The device consists of two plates of mica or other suitable insulating and heat resisting material having heads of preferably triangular shape, and rearwardly extending legs formed at the base of the heads, a plate of suitable metal interposed between the two mica plates and approximately conforming in shape therewith, said plate being divided longitudinally in the triangular head, and sufficient space being left between the two portions of the divided plate so as to obviate any tendency to short circuit, inwardly extending portions formed at the rear of the legs of the metal plate and provided with suitable tongues which fit into corresponding sockets connected with the circuit, and ribbon wire wound up one leg of the element and around the head and down the other leg of the element, the ends of the wire being suitably connected to the aforesaid portions.

It is to be understood that the above construction of the heating element is suitable for use in electric irons, but other shapes of the heating element may be suitable for use with other electrical utensils, as for instance, a circular metal plate having suitable terminals and divided into two portions suitably spaced apart, mica plates of like form to the metal plate on the top and the bottom of the latter and ribbon wire suitably wound around the mica plates and connected to the terminals, all, as hereinafter more particularly described and illustrated in the accompanying drawing in which—

Figure 1 represents a plan view of an element constructed according to my invention, of such shape as applied to electric

irons. Fig. 2, is a longitudinal section through line *a-a'* of Fig. 1. Fig. 3, is a plan view of a circular element constructed according to my invention as applied to electric stoves or the like.

Like letters of reference indicate corresponding parts in each figure.

1 and 2 are the mica plates. 3 is the metal plate interposed between them.

4 is ribbon wire wound around the plates.

In the form shown in Figs. 1 and 2 the mica plates 1 and 2 have triangular shaped heads 1^a and 2^a, and rearwardly extending legs 1^b and 2^b. The metal plate conforms in shape with that of the mica plates, having a two-part triangular shaped head 3^a, and rearwardly extending legs 3^b.

The sides of the triangular heads 1^a and 2^a are suitably serrated, but the sides of the triangular head 3^a of the metal plate are plain. The metal plate 3 is of slightly smaller size than the insulating plates thus preventing the wire coming in contact with the edges of the metal plate.

3^c are the portions formed at the rear of the element between the legs 3^b and integral therewith. The portions 3^c are slightly bent up, and are provided with tongues secured thereto. The ribbon wire 4 is wound up the right leg 3^b and up around the triangular heads 1^a and 2^a, fitting into alternate serrations in the sides thereof until they reach the apex of the mica plates.

5 and 6 are mica plates identical to the triangular heads 1^a and 2^a of the mica plates. These plates are placed on the heads 1^a and 2^a respectively, and the wire wound down around the same and fitting into the serrations in the sides of the plates between those occupied by the upwardly wound wire. The wire is then wound down around the left leg, and the ends of the wire 4^a are simply inserted between the legs 2^b of the mica plate and the legs 3^b of the metal plate.

When the element is placed in position in an iron, it is pressed down firmly and a contact formed between the ends of the wire and the terminal plates, it being understood of course that further insulated plates (not shown) are placed on the top and bottom of the element, so as to effectually insulate the wire from the portions of the iron. It will be understood that the metal and mica plates are held together by rivets 7.

In the form shown in Fig. 3 the metal

plate 3 as above stated is divided into two portions at 3°. The mica plates are on top and bottom of this divided metal plate, and the wire is wound around the same from one end to the other, the contact being formed in the same manner as above stated. Rivets 8 are provided to hold the metal and mica plates together, and 9 are the tongues which have suitable sockets connecting with the circuit.

It will be understood that a heating element constructed according to my invention will possess many advantages in that the metal plates, interposed between the mica plates upon which the wire is wound, will act as choke coils, thus effecting a material saving in the consumption of current; also the simple construction will do away with any liability to short circuit as well as allowing the element to be cheaply constructed and to be more durable.

What I claim as my invention is:

1. An electric heating element comprising a metal plate having a triangular shaped head and rearwardly extending legs, insulating plates one above and the other below the metal plate, and of substantially the same form as the said metal plate, resistance wire wound up around one leg of the insulating plates and around the heads thereof, and auxiliary insulating plates

similar in shape to the triangular heads of the main insulating plates placed on the top and bottom of said main insulating plates, the aforesaid wire being wound around the auxiliary plates and down the other leg of the insulating plates as and for the purpose specified.

2. An electric heating element comprising a metal plate having a head and rearwardly extending legs, insulating plates one above the other below the divided plate and of substantially the same form as the said metal plate, resistance wire wound up around one leg of the insulating plates and around the heads thereof, auxiliary insulating plates similar in shape to the triangular heads of the main insulating plates placed on the top and bottom of said main insulating plates, the aforesaid wire being wound around the auxiliary plates and down the other leg of the insulating plates, and terminal plates formed integrally with the aforesaid metal plate at the rear thereof having suitable means for connecting them to the electric circuit as and for the purpose specified.

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Witnesses:

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