R. W. BAKER, V. L. KING & H. C. PARKER.

ELECTRICALLY HEATED FLAT IRON.

APPLICATION FILED DEC. 29, 1909.

999,541. Patented Aug. 1, 1911.

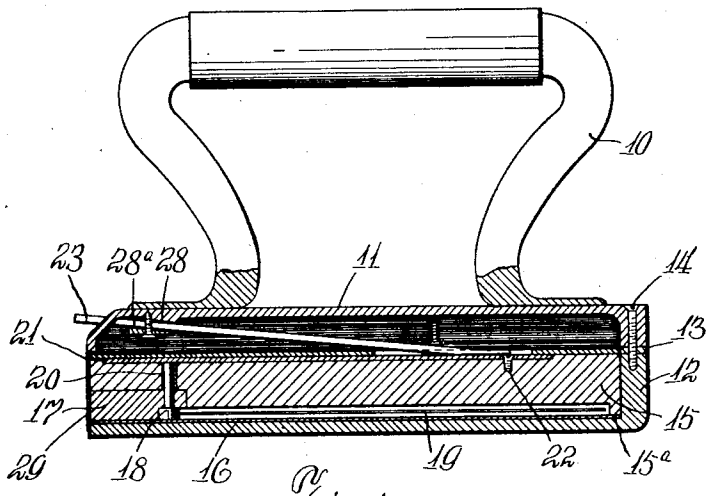

Fig. 1

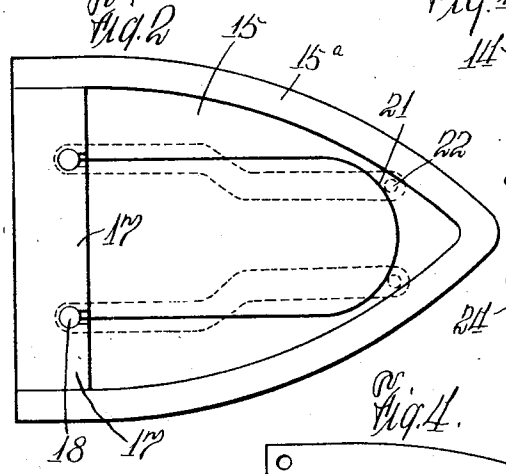

Fig. 2

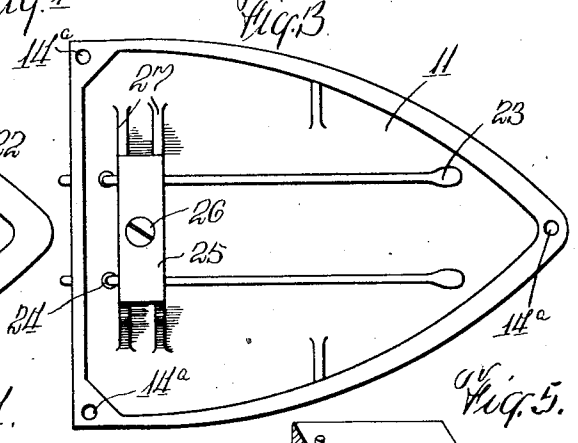

Fig. 3

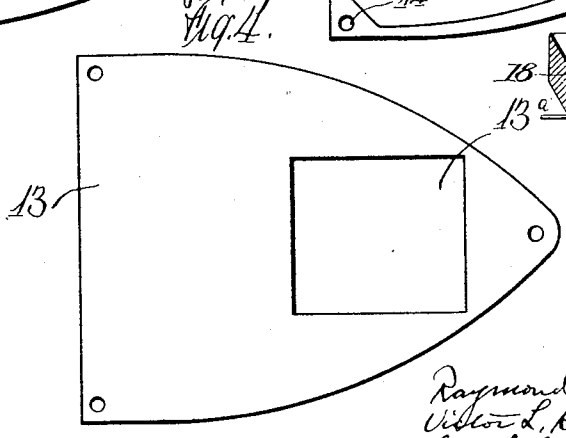

Fig. 4

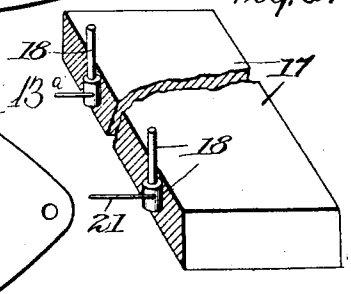

Fig. 5

Witnesses:
Frank L. Stubbs.
Archibald Daniell

Raymond W. Baker,
Victor L. King and
Herschel C. Parker,
Inventors
By their Attorney
W. B. Hulet Simon.

UNITED STATES PATENT OFFICE.

RAYMOND W. BAKER, OF NEW YORK, N. Y., VICTOR L. KING, OF WOODRIDGE, NEW JERSEY, AND HERSCHEL C. PARKER, OF NEW YORK, N. Y., ASSIGNORS TO PARKER-CLARK ELECTRIC COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

ELECTRICALLY-HEATED FLAT-IRON.

999,541. Specification of Letters Patent. Patented Aug. 1, 1911.

Application filed December 29, 1909. Serial No. 535,469.

To all whom it may concern:

Be it known that we, RAYMOND W. BAKER, of the city, county, and State of New York, VICTOR L. KING, of Woodridge, Bergen county, New Jersey, and HERSCHEL C. PARKER, of the city of New York, county of Kings, and State of New York, have invented a new and useful Improvement in Electrically-Heated Flat-Irons, of which the following is a full, clear, and exact description.

Our invention relates to improvements in electrically heated flat-irons, and the object of our invention is to produce a flat-iron in which the necessary heat is generated within the body of the iron and is obtained by radiation from an electrical resistor adapted to glow in the air upon the passage of an electric current through it.

A further object of the invention is to produce a device in which the heating element is not only inexpensive, but is also easily renewable. To this end we use as a heating unit a resistor, preferably in filament form, which will glow immediately and continuously in the open air when a current of electricity is passed through it. We have found by experiments that a filament made of the substance known as silundum has all these desired characteristics. This material is a solid solution composed of silicon carbid dissolved in carbon. The method of producing silundum is fully set forth in our application for a patent for electric filaments or resistors filed November 26th, 1909, Serial No. 529,893. In this case we do not limit ourselves to the use of the particular resistor described, but this is the only one we know of which is entirely satisfactory.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a sectional side view of the flat-iron. Fig. 2 is an inverted plan of the insulating block supporting the filament. Fig. 3 is an inverted plan of the cover of the iron. Fig. 4 is a plan view of the insulating mat, and Fig. 5 is a detail of the block support for the heating filament or unit.

The flat-iron has the ordinary handle 10 attached to the top part 11 of the iron. The top part is attached to the base or face 12 by screws 14 through the holes 14ª in the top. Between the top 11 and base portion 12 is a pad 13 of a material which is a non-conductor of heat and electricity. Asbestos fiber serves very well as such a material. The base portion 12 is hollow and adapted to contain the insulating block 15 which fits snugly in the interior of the base, the top of said block being flush with the upper edge of said base portion. The back of the base is open so that the insulating block can be easily slid in and out. Covering the entire bottom of the inside of the face portion is a thin sheet 16 of mica or other material which is a non-conductor of electricity. This is for the purpose of insulating the heating element by preventing any possibility of contact between it and the metal base. The lower surface of the block 15 is cut away as shown in Fig. 1, leaving a rim 15ª around the two sides as shown in Fig. 2.

The block 17 is held in place between the block 15 and the base 12. Plugs 18 extend through the said block 17 and into split tubes 20 supported in the block 15. The plugs 18 have holes on their front surfaces adapted to receive the ends of the filament 19. The ends of the filament are inserted in these holes in the plugs, and then held in place by a cement which is a good conductor of electricity. This provides a rigid support for the filament and also a perfect electrical contact between the filament and the plug.

On the upper surface of the blocks 15 are thin metal strips 21 held in place by screws 22 and connected with the upper portion of the tubes 20. Extending into the hollow top part of the iron are contact rods 23. These rods enter through perforations in the cover 11 and are insulated from the metal of said cover by collars 24, see Fig. 3. These rods are supported and held in place between the plate 25 and ribs 27 by the screw 26 which screws into the cover. The rods 23 are insulated from the cover 11 and also from the metal plate 25 by sheets 28 and 28ª which are of mica or other insulating material. When the top of the iron is fastened to the base portion, these rods 23 will contact with the metal strips 21, thus forming an electric connection through said strips and the tubes 20 and plugs 18 to the filament 19.

In order that the rods may contact with the strips as above stated, the pad 13 is cut away as shown at 13ª in Fig. 4. As the back of the base is open, a thin metal plate 29 is provided which is bent over so that said bent-over portion is adapted to be clamped and held in place between the top 11 and the mat 13, and the lower part of said plate forms a cover for the end of the flat-iron.

It will thus be seen that we provide a flat-iron in which the heating element is easily and quickly renewed. If a filament becomes broken or worn out, the top is removed by taking out the screws 14; the block 15 is removed and the block 17 replaced by another just like it having a fresh filament attached thereto. As no mechanical skill is required to do this, anyone using the iron can replace the filament in a few minutes. The face of the iron being heated by radiation from the filament, the heat is evenly distributed, and not as in other electrically heated flat-irons largely centered in the back part of the iron.

Means for connecting the electric wires to the outer ends of the rods 23 are not shown as any desired method may be used.

The particular form and arrangement of parts within the body of the iron may be changed without changing the principle of the invention.

We have set out a very simple and effective way to utilize the heating element for the purpose desired, and we claim specifically the flat-iron shown, and also broadly a flat-iron which is heated by radiation from an electric resistor in filament form which will glow continuously in the open air on the passage of an electric current through it. This is an important feature because the filament which we have described has an ordinary temperature when heated of about 1500 degrees C., at which temperature it will glow continuously, and as a result the filament can be applied very near to the part which is to be heated, and especially can be extended up into the point of the iron, and so we get great efficiency.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent:—

1. In an electrically heated flat iron, a heating unit comprising an insulating block, metal plugs extending through said block, means for securing said block in a flat iron, and a resistor in filament form supported by the plugs and extending from one side of the block.

2. In an electrically heated flat iron, a hollow top portion, a metal face detachably connected to said top portion, an insulating block contained within said face portion and supporting upon its upper surface thin metal strips, contact rods entering said top portion and adapted to contact with said metal strips, a resistor in filament form supported within said face portion, and electric connections between said resistor and said metal strips.

3. In an electrically heated flat iron, a heating element comprising a resistor in filament form adapted to glow in the open air upon the passage of an electric current through it, a block of insulating material, metal plugs extending through said block and adapted to support said resistor, said plugs extending above the upper surface of said block, a second insulating block, split metal tubes supported within said second block and adapted to contact with said plugs, and electric connections for the resistor through said tubes.

4. A hollow flat iron having an insulating block extending longitudinally therein, the surface of the block next the face of the iron being chambered, a thin non-conducting strip between the chamber and the face of the iron, an open air glowing filament supported in the chamber of the block and near the non-conducting strip, and electrical connections for the filament.

RAYMOND W. BAKER.
VICTOR L. KING.
HERSCHEL C. PARKER.

Witnesses:
WARREN B. HUTCHINSON,
ARTHUR G. DANNELL.