UNITED STATES PATENT OFFICE.

TYCHO VAN ALLER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ELECTRIC FLAT-IRON.


To all whom it may concern:

Be it known that I, Tycho Van Aller, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Electric Flat-Irons, of which the following is a specification.

This invention relates to electric flat irons and has for its object the provision of a device of this character in which the heat distribution and heat storage are such as to effect a high efficiency, while the construction and arrangement of the parts are so simplified and improved that the iron can be conveniently operated and may be produced at a low cost.

In the construction of flat irons, it has been found desirable to have the heat storage as near as possible to the work to be done; in other words, between the heat unit and the work. I have also found that by far the largest part of the work of the iron is done around the edge of the iron. It is desirable, therefore, that the heat be applied around the outside of the iron and that the greatest mass of metal likewise be concentrated at the edge, so that the heat will flow quickly to the work. In carrying out my invention therefore, I arrange the body of the iron in such a way that the heat is applied only to a narrow strip around the outer edge of the iron, so that an efficient distribution of the heat will be obtained.

I also have the mass of metal under the unit instead of on top of it and the inner part of the iron is cut away or chambered out so that the metal is quite thin compared with the edge or outer portion of the iron.

Other objects and purposes of my invention will appear in the course of the following specification, in which I have shown my invention embodied in concrete form for purposes of illustration.

In the drawings: Figure 1 represents a side elevation of the complete flat iron; Fig. 2 represents a longitudinal section thereof with the handle partly broken away; Fig. 3 represents a plan view of the iron with the upper plates removed and the mica insulation partially broken away; and Fig. 4 shows a detail of the connecting terminals.

Referring to the drawings, 10 represents the body of the iron, which may be of cast iron or any desired metal and is of any desired shape, as for instance, the conventional shape shown in the drawing. This body has the center chambered out at 11, the shape of the chambered portion being substantially the shape of the iron. The outer portion of the iron is thicker than the inner portion and the thickest portion is at the surface 12, which is to be finished or machined to receive the heat unit 13. In other words, the greatest thickness of the body 65 of the iron is between the heating unit and the face of the iron. The heating unit 13, which is applied to the surface 12 is, as shown, in the form of a flat strip extending around the iron parallel with the edge, so that the portion which is heated is simply the outside edge of the iron. The unit is placed as near as practicable to the edge of the iron so that the heat will be concentrated at the edge which first meets the damp surface in ironing. The particular form of unit used in this iron forms no part of my invention, although I have shown, for purposes of illustration, the form of unit which is described and claimed in my previous application, Serial No. 444,908.

This unit has proved very satisfactory and is very well adapted for this purpose. The unit is produced by winding a flat resistance ribbon in the form of a spiral and then flattening the spiral down on to itself. The resistance ribbon used may be of the high resistance type, which forms a film of insulation upon the surface when heated, so that the turns may be in contact with each other without short-circuiting. This unit is laid upon the finished or machined surface 12, strips of mica, 14, being placed on either side of the unit. A cover plate 15, likewise having the surface around the outer edge machined for engagement with the unit, is placed over the unit and screwed to the body 10. Plate 15 is preferably of relatively-thinner metal than the body of the iron, so that there will be practically no storage of heat above the unit. It is evident that if there were any great amount of storage in the plate 15, that in traveling to the work, the heat would have to travel
a long distance and travel back through the
unit, whereas if only the lower plate has
storage capacity the heat is delivered to the
work much more quickly and efficiently.

This plate is held to the body by means of
cap screws 16, which pass through the
plate and are tapped into the body. The
terminals of the unit are brought out, as
shown, to terminal pins 17, which are
mounted in a hood casing 18. A sheet
iron cover 19 is then placed over the cover
plate and rests in contact with the body,
the hood 18 passing through the cover. This
cover is held in place by means of a screw
20, which is tapped into the cover plate. A
handle 21 is riveted to the cover as shown.

It will be seen that I have provided a
flat iron which is very inexpensive to con-
struct and at the same time has the heat
20 concentrated at the parts where it will be
of the greatest service. The heat storage
is likewise so located that the heat will flow
to the work quickly.

While I have shown my device as con-
structed in a specific manner in accordance
with the patent statutes, it should be under-
stood that I do not limit my invention there-
to, since various modifications will suggest
themselves to those skilled in the art, with-
out departing from the spirit of my inven-
tion, the scope of which is set forth in
the annexed claims.

What I claim as new and desire to secure
by Letters Patent of the United States is:

1. An electric flat iron comprising a body
having a narrow resistance strip extending
flatwise around its outer portion adjacent
to the edge and in heat conductive relation
therewith.

2. An electric flat iron comprising a body
having a narrow resistance strip extending
flatwise around its outer portion parallel
with the edge and in heat conductive relation
therewith.

3. An electric flat iron comprising a body
having a narrow flat resistance strip laid
flatwise upon its outer edge and in heat con-
ductive relation therewith so as to leave
the inner portion substantially the shape of
the iron.

4. An electric flat iron comprising a body
portion having a flat resistance unit laid
flatwise upon its outer edge and a flat strip
secured to the body portion to hold the unit
in place.

5. An electric flat iron comprising a body
having its outer portion of thicker metal
than its inner portion and a resistance unit
arranged to apply heat to the outer portion.

6. An electric flat iron comprising a body
having its outer portion of thicker metal
than its inner portion and a resistance unit
in intimate conductive relation with the
outer portion.

7. An electric flat iron comprising a body
having a chambered inner portion and a
narrow resistance strip extending around
said chambered portion.

8. An electric flat iron comprising a body
having the inner portion thinner than the
outer portion and of substantially the shape
of the body and a narrow resistance strip
surrounding said inner portion.

9. An electric flat iron comprising a body
having the inner portion thinner than the
outer portion and a narrow resistance strip
surrounding said inner portion spaced from
the outer edge of the body.

10. An electric flat iron comprising a body
having its outer portion of thicker metal
than its inner portion and a resistance unit
arranged to apply the heat to a narrow strip
of the outer portion spaced from the outer
dge.

11. An electric flat iron comprising a body
portion, a heating unit therefor, a terminal
support independent of said body having
terminal pins rigidly secured thereto, and a
cover for said body arranged to hold said
support in place.

12. An electric flat iron comprising a body
having a flat resistance unit laid flatwise upon the outer edge of the body and
a flat metallic plate of thinner metal than
the body portion engaging the unit for hold-
ing it under pressure.

13. An electric flat iron comprising a body
having its outer portion of thinner metal
than its inner portion, a resistance unit in
intimate thermal relation with the outer por-
tion, and a flat plate of thinner metal than
the body for holding the resistance in place
under pressure.

14. An electric flat iron comprising a body,
a flat resistance unit extending around its
outer portion, a metallic plate secured to
the body portion to hold the unit in place
and a removable cover over said plate.

15. An electric flat iron comprising a body,
a flat resistance unit extending around its
outer portion, a metallic plate secured to
the body portion to hold the unit in place,
and a removable cover over said plate and
out of contact therewith.

16. An electric flat iron comprising a body,
a flat resistance unit extending around its
outer portion, a metallic plate secured to
the body portion to hold the unit in place,
and a removable cover over said plate held
in place independently of the plate.

17. An electric flat iron comprising a body,
a flat resistance unit extending around the
outer portion thereof, a metallic plate
secured to the body portion and holding the
unit in place, and a terminal support inde-
dendent of said body portion and having
terminal pins rigidly secured thereto.

18. An electric flat iron, comprising a
body, a flat resistance unit extending around
the outer portion thereof, a metallic plate
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secured to the body portion for holding the
unit in place, a terminal support indepen-
dent of said body having terminal pins rigidly
secured thereto, and a cover for said body
5 arranged to hold said support in place.

19. An electric flat iron comprising a body
having its inner portion chambered out so
as to leave a narrow ridge around the out-
side, a flat resistance unit mounted upon
10 said ridge and in heat conductive relation
therewith, and a metallic plate of thinner
metal than the body secured to the body to
hold the resistance unit in place under
pressure.

In witness whereof, I have hereunto set my hand this 16th day of February, 1909.

TYCHO VAN ALLER.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.