March 29, 1938. C. V. GARDNER 2,112,667

IRONING ELEMENT

Filed Aug. 8, 1934 2 Sheets-Sheet 1

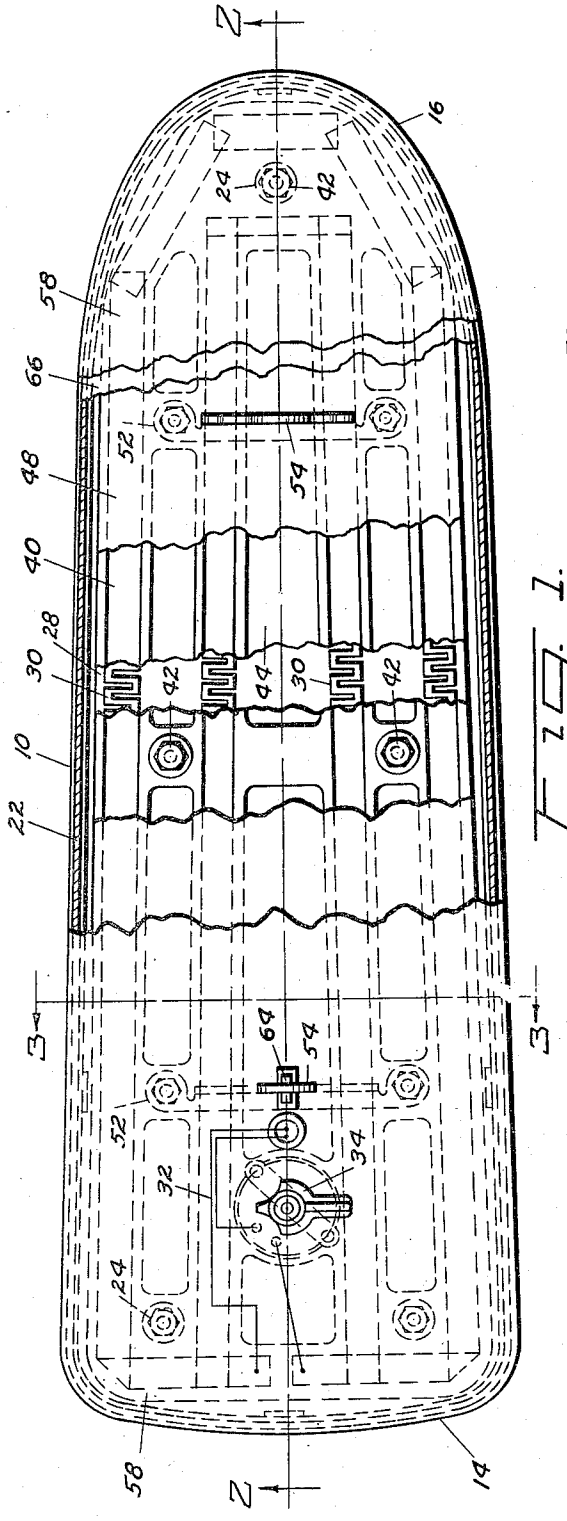


FIG. 1.

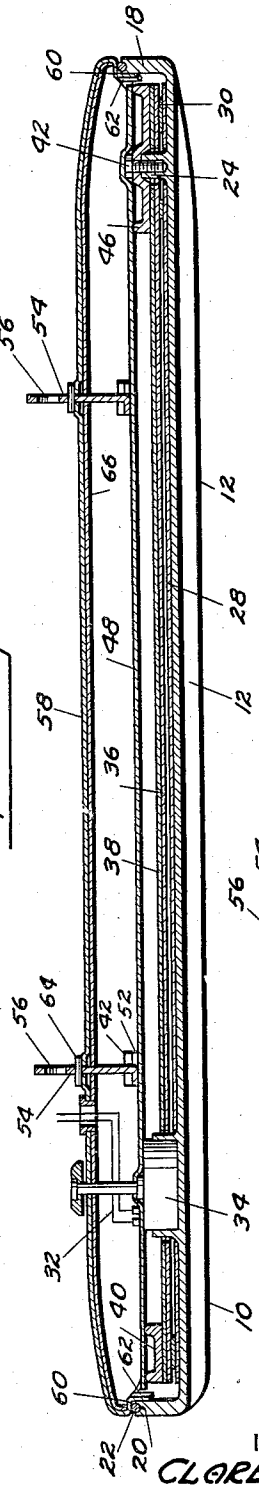


FIG. 2.

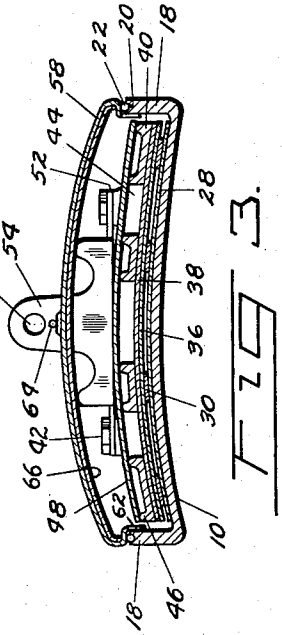


FIG. 3.

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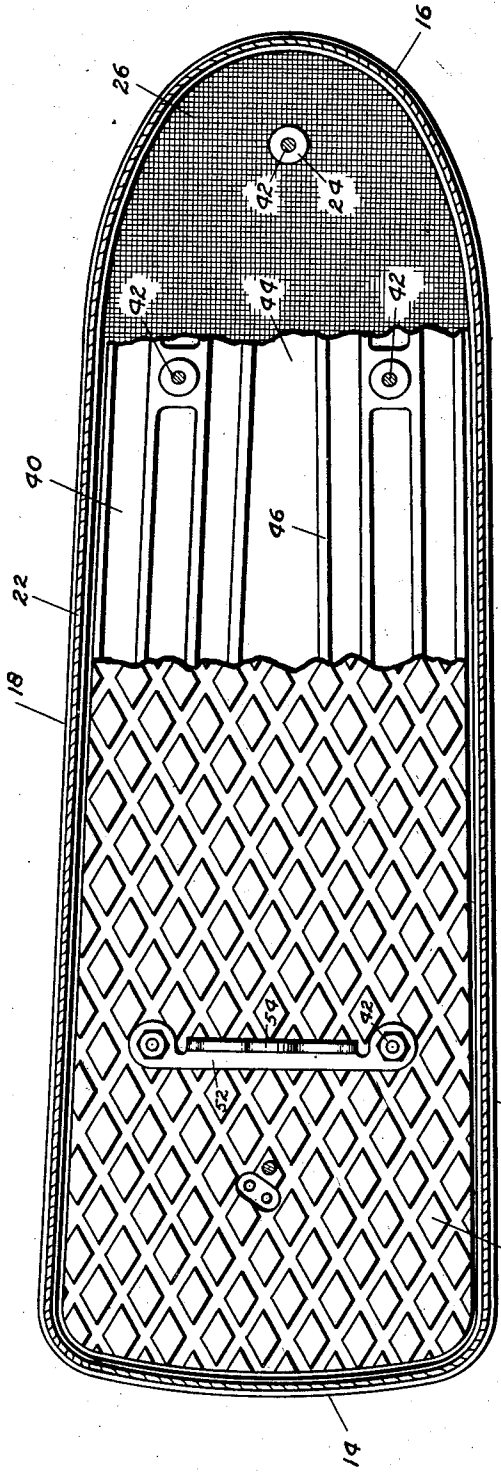


FIG. 4.

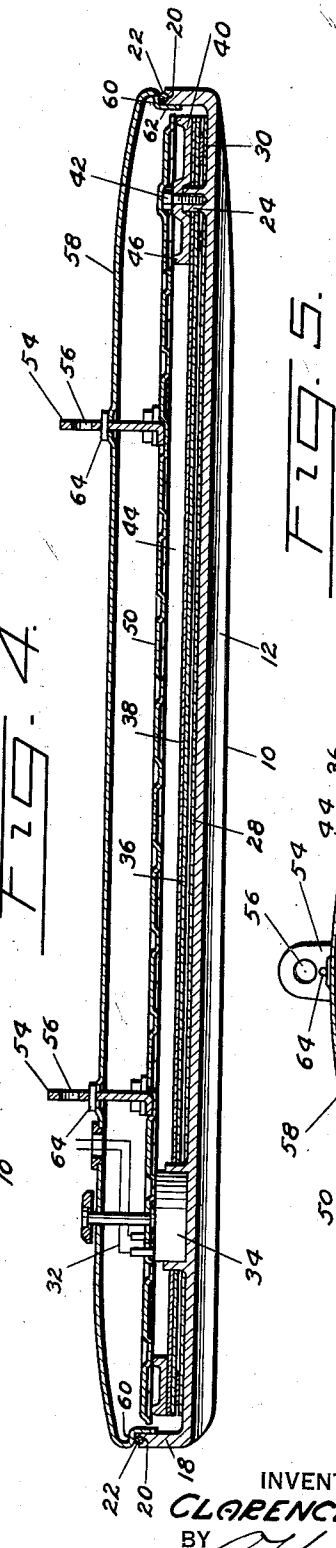


FIG. 5.

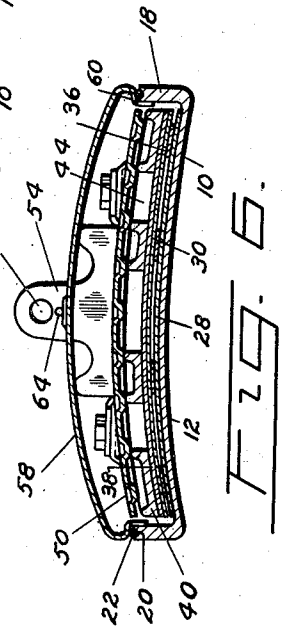


FIG. 6.

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UNITED STATES PATENT OFFICE

2,112,667

IRONING ELEMENT

Clarence V. Gardner, Detroit, Mich., assignor to Hydraulic Brake Company, Detroit, Mich., a corporation of California

Application August 8, 1934, Serial No. 739,040

4 Claims. (Cl. 219—19)

This invention relates to ironing machines, and more particularly to ironing elements.

It is common knowledge that in ironing machines having an ironing head heated by an electrical heating element, the top of the head or the cover plate therefor rapidly absorbs heat generated by the heating element and becomes a source of danger to the operator of the machine. The present invention aims to overcome this difficulty.

An object of the invention is to provide an ironing element the top of which will not readily absorb heat.

Another object of the invention is to provide an ironing element including a casing having therein a heating element and another element for reflecting the heat.

A further object of the invention is to provide an ironing element including a casing having an ironing face and a cover plate housing a heating element and a plurality of elements within the casing for reflecting the heat.

The novel features considered characteristic of the invention are set forth with particularity in the appended claims. The invention itself, however, both as to its organization and its method of operation, together with additional objects and advantages thereof, will best be understood from the following description of the specific embodiments when read in connection with the accompanying drawings, in which,—

Fig. 1 is a top plan view of an ironing element partly broken away to more clearly illustrate the invention;

Fig. 2 is a longitudinal sectional view substantially on line 2—2, Fig. 1;

Fig. 3 is a cross-sectional view substantially on line 3—3, Fig. 1;

Fig. 4 is a top plan view of an ironing element with the cover removed and parts broken away to fully illustrate a modification of the invention;

Fig. 5 is a longitudinal sectional view of an ironing element embodying the modification of the invention; and

Fig. 6 is a cross-sectional view showing an ironing element embodying the modification.

There are a number of patented processes, known as anodic treatments, for producing surface oxide coatings upon aluminum or aluminum-rich alloys. In all of them the aluminum is made the anode, in a suitable electrolyte, under accurately controlled conditions of electrolysis. The resulting oxide coatings possess certain advantageous properties. Their resistance to corrosion is usually appreciably greater than that of the untreated material. Paints adhere better to the anodized surface and the coatings are often capable of direct coloring by means of dyes, etc.

The electrolytes most widely used in this country are chromic acid or sulphuric acid. The typical procedure in one process, known as the Bengough process, is as follows: The aluminum article is thoroughly cleaned free from grease and then made the anode in an electrolyte of 3 per cent chromic acid kept at a temperature of 40° C. A steel tank or graphite rod may serve as the cathode. The voltage is raised from 0 to 40 volts in 15 minutes, held at 40 volts for 5 minutes, raised to 50 volts in 5 minutes, and held at 50 volts for 5 minutes. The article is then removed, washed and dried. It is proposed to make use of this or a similar process in the production of an efficient ironing element.

In the illustrated embodiments of the invention, an ironing element or head includes a plate 10 having an ironing face 12 which may be of any desirable profile. Preferably the plate is wider at one end than at its other end and is slightly concave throughout its length. The respective ends of the plate are rounded as at 14 and 16 and the plate has an upward extending marginal flange 18 in the edge of which is a continuous groove 20 having fitted therein a heat-resisting material or packing 22.

On the back of the plate is a plurality of tapped bosses 24, the purpose of which will hereinafter appear, and the back has an anodic finish dyed black or painted black as indicated at 26 to more effectively absorb heat. It is, of course, to be understood that such paint as may be used should possess such characteristics as to resist disintegration due to changes in temperature and particularly intensive heat.

A sheet of mica 28, having openings for the reception of the bosses 24, is laid on the back of the plate over the oxide coating which may be dyed or painted black, and positioned on the sheet of mica is a heating element 30 connected in a circuit 32 including a rheostat 34.

A second sheet of mica 36, also having openings for the reception of bosses 24, is laid over the heating element, and a sheet of asbestos 38, likewise having openings for the reception of the bosses, is laid over the second sheet of mica. The assembly of the heating element, the sheets of mica, and the sheet of asbestos is surmounted by a compression plate 40 secured in position by studs 42 threaded in the bosses 24. Preferably the compression plate is slotted as indicated at 44 so as to provide spaced longitudinal sections

arranged to register with portions of the heating element, and the perimeters defining the slots have upward extending flanges 46.

A sheet of aluminum foil 48, having openings for the reception of certain of the bosses 24, is laid over the compression plate 40 and is supported slightly above the compression plate by the flanges 46. The purpose of this sheet of aluminum foil is to reflect the heat downward against the heating element assembly and to provide more effective or efficient deflection of the heat. This sheet of aluminum alloy may be uneven or embossed as indicated at 50, to increase the area thereof and to reflect the heat at different angles.

Straps 52, secured in position by the studs 42 threaded in the bosses which extend upward through the aluminum alloy sheet, have thereon lugs 54 apertured as at 56 for attaching the head to a suitable support, not shown, but which may be of any conventional type.

A cover plate 58 has its perimeter deformed to provide a shoulder 60 and a marginal flange 62. The shoulder is seated on the heat-resisting material or packing 22 in the groove 20, and the flange 62 telescopes the marginal flange 18 on the plate 10. The cover plate is also provided with openings for the reception of the lugs 54, and pins 64 passing transversely through the lugs retain the cover plate against displacement.

The inner surface of the cover plate is highly polished to provide a suitable surface for the reflection of heat, or the inner surface of the cover plate may be lined with a sheet of aluminum foil 66 to effectively reflect the heat from the cover plate; and in instances where it is found desirable to provide an increased area for the reflection of the heat, the sheet of aluminum foil 66 may be embossed similar to the sheet of aluminum foil 50 supported on the compression plate.

Although this invention has been shown and described in connection with certain specific embodiments of the invention, it is perfectly clear that many modifications thereof are possible. Therefore, the invention is not to be restricted except in so far as is necessitated by the prior art and by the scope of the appended claims.

Having thus described the various features of the invention, what I claim is new and desire to secure by Letters Patent is,—

1. An ironing element comprising an ironing plate, a cover fitted on the ironing plate, a heating element, a compression plate clamping the heating element on the back of the ironing plate, a reflector supported by the compression plate, and a reflector on the cover arranged in spaced relation to the reflector supported by the compression plate.

2. An ironing element comprising an ironing plate having an oxidized and darkened back and a marginal flange, a cover plate having a marginal flange telescoping the flange on the ironing plate, a heating element on the oxidized and darkened back of the ironing plate, a reflector supported in spaced relation to the heating element, and a reflecting metallic lining on the inner surface of the cover plate.

3. An ironing element comprising an ironing plate having an oxidized and darkened back and a marginal flange, a cover plate having a marginal flange telescoping the flange on the ironing plate, a heating element, a compression plate clamping the heating element to the oxidized and darkened back of the ironing plate, a reflector supported on the compression plate in spaced relation to the heating element, and a highly polished metallic lining on the cover plate in spaced relation to the reflector supported on the compression plate.

4. An ironing element comprising an ironing plate having an oxidized and darkened back, a marginal upwardly extending flange on the plate, a cover plate having a marginal flange telescoping the flange on the ironing plate, a heating element, a compression plate clamping the heating element on the oxidized and darkened back of the ironing plate, an embossed reflector supported by the compression plate in spaced relation to the heating element, and an embossed reflector on the inner surface of the cover.

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