March 31, 1931. C. C. ARMSTRONG 1,798,648

WAFFLE IRON

Filed Sept. 20, 1928

Fig. 1.

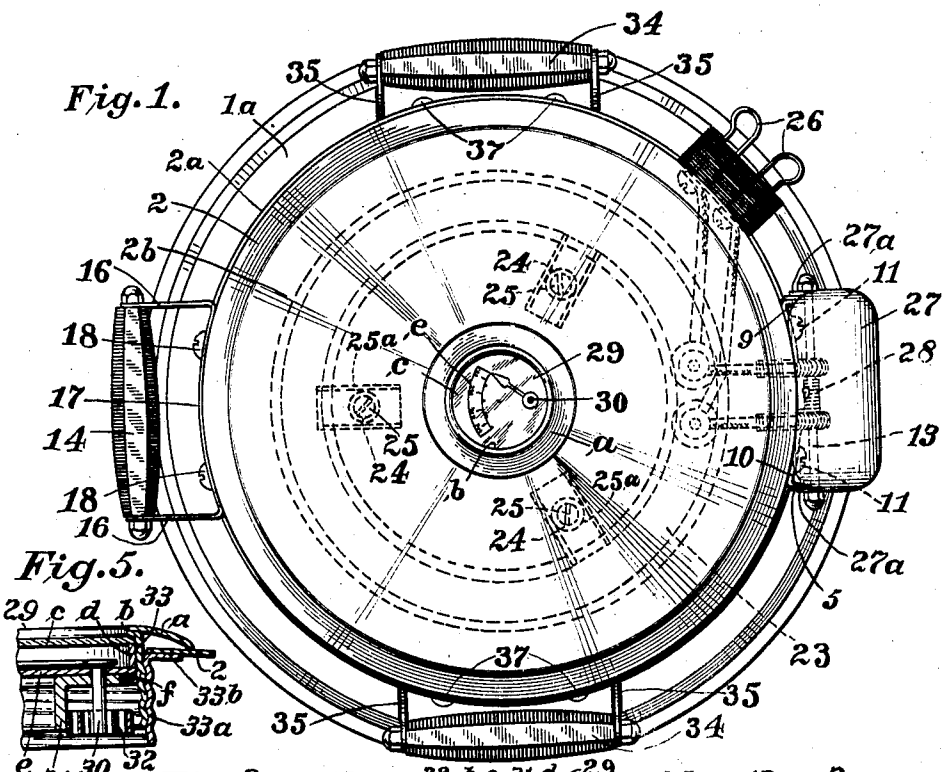


Fig. 5.

Fig. 2.

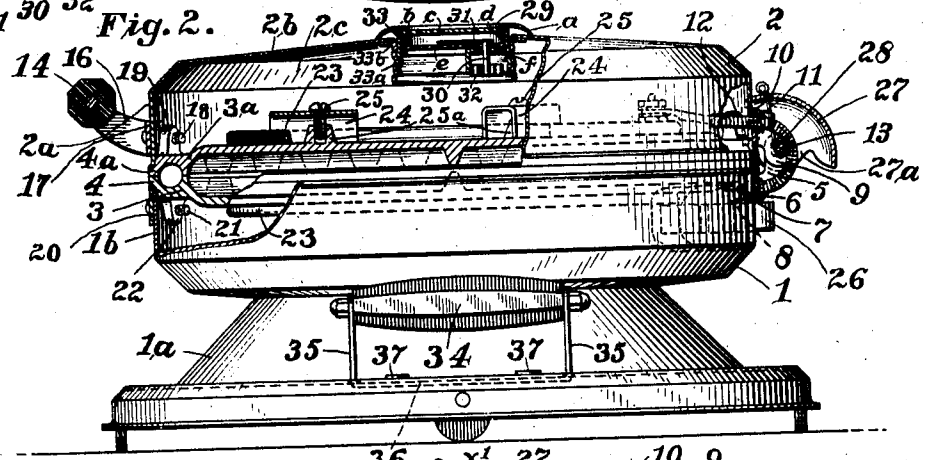


Fig. 3.

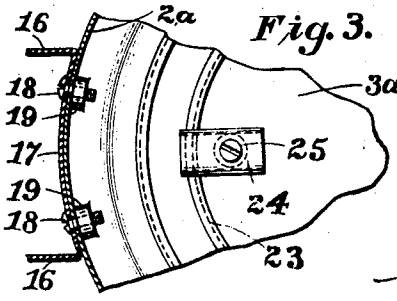
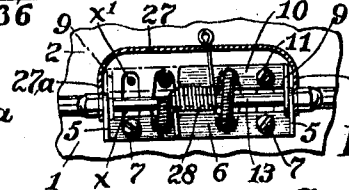


Fig. 4.



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UNITED STATES PATENT OFFICE

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WAFFLE IRON

Application filed September 20, 1928. Serial No. 307,277.

The invention includes a thermometer so associated with the waffle iron structure as to be affected by the heat of the heating element and so positioned as to readily indicate to the user the temperature that the iron has reached. It is important that the iron will have reached the proper temperature before placing the batter in the mold. If the heat is too low, a soggy condition of the waffle results and trouble frequently ensues from this because of the waffle parting at its center when the mold sections are separated, leaving a portion sticking in each mold.

By the present invention, the user can readily observe when the iron has reached the proper temperature for the successful cooking of the waffles.

The invention consists of the features and combination and arrangement of the parts hereinafter described and particularly pointed out in the appended claims.

In the drawings:

Fig. 1 is a plan view of the iron.

Fig. 2 is a central vertical section.

Fig. 3 is a plan view of part of one of the molds with the sheathing or casing in which the electric heating element is housed.

Fig. 4 is a detail view of the hinge connections.

Fig. 5 is an enlarged fragmentary view showing the indicator connections to the top of the casing and depending into the space between the top of the casing and the mold.

In the drawings, 1 indicates the lower frame section and 2 the upper frame section of the iron.

The lower section comprises a base 1*a*, and a cylindrical body portion 1*b* of sheet metal connected with the base. This cylindrical body portion or rim supports the lower mold 3 which is flanged or shouldered at 4 to fit this rim. This mold is of cast aluminum. The upper section 2 is of sheet metal having a cylindrical body portion 2*a* of the same diameter as the upper rim or body portion of the lower section and this upper section also has a crown or cover portion 2*b* forming the top closure of the apparatus and enclosing a space 2*c* above the upper mold and heating element.

The upper mold 3*a* is shouldered or flanged at 4*a* to fit the rim of the upper frame section 2. The two sections are hinged together so that the upper section with its mold can be thrown back, carrying its mold up and away from the lower mold to expose the faces of the molds. The hinge construction comprises a pair of ears 5 formed in one piece with a base plate 6 which is secured by screws 7 passing through notches x in the lower sheet metal frame section into ears 8 depending from the lower mold and fitting close against the inner side of the wall of the lower frame section.

The upper hinge section likewise is provided with ears 9 formed in one piece with a base plate 10 which is secured by screws 11 passing through notches x^1 in the wall of the upper frame section and into ears 12 upstanding from the upper mold section at the margin thereof and close to the wall of the upper frame section. The two sets of hinge ears are connected together by a cross rod or bolt 13. At the side of the apparatus opposite the point where the hinge is located, there is a handle 14 provided on the upper frame section which is mounted in ears 16 of a bracket, the base 17 of which is secured to the upper frame section by screws 18 passing therethrough and through the wall of the upper section, said screws entering ears 19 upstanding from the upper mold to thus connect the same to the upper frame section. A name plate 20 may be secured to the lower section of the frame by screws 21 and these pass into ears 22 depending from the lower mold section by which this is held to the frame at a point diametrically opposite the point where the other fixture of the molds is effected as above described; i. e., opposite the point where the hinge is located.

The molds are heated by elements in direct contact with the backs of the molds and sheathed by casings 23, of metal which will conduct and radiate the heat from said elements.

These casings or sheaths enclosing the heating elements are of ring shape and they are

secured to the molds by lugs or clips 24 of sheet metal stamped into channel form, and held by screws 25 to studs 26 cast on the backs of the mold plates.

The leads for supplying electric current extend from contacts 26 at the side of the lower section of the frame to binding posts on the sheath or casing of the lower heating element and branch leads extend from these binding posts out through the wall of the lower frame, also through openings in the back of the lower hinge member, and up outside the hinge bolt thence inwardly over said bolt and through openings in the base plate of the upper hinge member and through the wall of the upper frame section to the upper heating element. At the points where these leads pass through the walls of the upper and lower frame sections, said sections are notched at their edge portions to provide the openings through which the leads extend. This facilitates the assembly of the parts by avoiding threading of the leads through openings. The top or cover section can be readily lifted off from the upper mold section by taking out the fastening screws above mentioned and, without disturbing the electric connections. This will permit access to the upper mold section and to the thermometer, hereinafter referred to. Likewise, the lower mold section can be lifted from the lower frame section without disconnecting the lead wires, the notched formation of the edge of the lower frame section permitting this to be done.

For guarding and protecting the lead wires at the hinge, a guard plate 27 is arranged to substantially cover the space between the ears of the hinge members. This plate is of curved form. It has depending ears 27*a* pivotally mounted on the hinge bolt and it is pressed towards the frame of the apparatus by a spring 28. This guard, when the upper section of the frame is swung up and back, simply yields away or moves outwardly from its normal position while maintaining its function of covering the lead wires and guarding the user from contact therewith. When the upper section is swung back into place, the guard, under action of its spring, follows up the closing movement of the upper section and maintains its protective relation in respect to the lead wires.

In order to indicate the temperature of the iron so that the user may ascertain when such temperature is existing as will give the best results, a thermometer is associated with the iron. This is mounted on the upper section and at the center of the top or cover portion, as indicated at 29. It consists of a pointer swinging over a segmental scale, the pointer being mounted on a post or shaft 30, turnable in a bearing 31 under the influence of a thermostatic coil 32. This coil is within a collar 33 depending from the under side of the top plate or cover of the upper section. The collar is open at its lower end and the thermostatic coil is thus exposed to the heat from the heating element of the upper mold section. The collar 33 has a flange *a* resting on the upper side of the top plate, which flange has a shoulder at *b* against which the glass *c* is pressed. Below the glass, there is a split leaf spring *d*, and below this is the dial disc *e* carrying the graduations and this disc is held in place by a split wire spring *f*.

The collar 33 is corrugated in the form of a screw thread and receives a clamping collar 33*a* which screws thereon and is provided with a flange 33*b* to bear on the under side of the top plate, to clamp the thermometer organization in place.

The user without effort can ascertain at any time what the temperature is, the scale and pointer being of ample size and being located so as to be well within the vision of the user seated at the table, upon which the waffle iron is intended to be used.

Handles 34 are attached to the base of the iron. Said handles comprise the standards or arms 35 connected by a cross plate 36. The latter fits against the under side of the base plate and the arms pass up through openings in the base of the iron. Rivets 37 complete the attachment of the handle to the plate.

It will be seen that the upper and lower members of the hinge are fastened by screws to the upper and lower molds, respectively, and that the sheet metal casing or frame sections are clamped to the molds by the hinge members, both frame sections being notched at their edges. The molds and frame members are thus readily separable at the point where the hinge is located; that is, by taking out the screws at the handle and at the name plate and by loosening the screws at the hinge members, the upper sheet metal member can be lifted off and the molds can be separated from the lower sheet metal section.

I claim:

1. In combination, with the top plate of a waffle iron, a screw threaded collar depending from an opening in said top plate into the space below said top plate and above the mold and having a flange resting on said top plate, a glass, dial and pointer within the collar, horizontally disposed and substantially flush with the top plate, a thermal element also within the collar connected to the pointer, and a clamping collar or nut on the screw threaded collar bearing on the under side of the top plate and clamping the thermometer to said top plate, substantially as described.

2. In combination with a waffle iron composed of a lower section and a hinged upper section with molds carried by said sections and said upper section having a conical top and having a space between its conical top or cover plate and its mold, a temperature responsive element depending from the apex

of said conical cover to a point substantially centrally of said space both vertically and horizontally whereby it is disposed in position to be directly controlled by the radiated heat from the hottest portion of the upper mold, and temperature indicating means exposed to view through the cover and controlled by the temperature responsive element.

In testimony whereof I affix my signature.

CHARLES C. ARMSTRONG.