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Cooking system

Christian A. Mohr
AB Electrolux - Group Patents

Enrico Valentini
Electrolux

Alan Mengozzi
Electrolux

Massimo Zangoli
Electrolux

Claudio Paolini
Electrolux

See next page for additional authors

Inventor(s)
Christian A. Mohr, Enrico Valentini, Alan Mengozzi, Massimo Zangoli, Claudio Paolini, Antonio D'Agostino, and Alex Viroli

Cooking System

This disclosure describes a cooking hob, particularly an induction cooking hob.
Such induction cooking hob usually comprises generators with several components.

Particularly the power electronics comprise electronic components, such as rectifiers and switch elements, particularly IGBTs, to generate the high frequency voltage for generating an induction field from a coil.

The rectified and/or the switch elements, IGBTs are usually mounted on a heat sink cooling body. Such heat sink are usually made from aluminum or other metals to create a cooling mass for the heat generated in the electronic components. Additionally, it is known to provide a fan for providing and circulating cooling air, which is usually blown alongside the heat sink cooling body.

To make such cooling more efficient it is known in the art, particularly also from EP1936283B1 to create a kind of cooling channel in order to keep the cooling air more close to the electronic components, which are mounted on the heat sink cooling body. Figure 1 shows a cross section of such prior art configuration.

Herein disclosed is a Heatsink-Air guide solution to be implemented on an electronic module, like a power board, power electronics of an induction hob. An example is shown in Figure 2 below.

The Heatsink-Air guide permits to dissipate thermal energy and at the same time, to canalize air flow into power electronic devices.

This solution is based on a dedicated 3D shape able to maximize thermal energy dissipation through conduction method furthermore is able to guide air flow coming from an external generator leading to a convection energy transfer from heatsink to air/liquid.

The disclosure is to combine in a single object the capability to take advantages of heat dissipation like a traditional heatsink and a traditional air guide.

In particular such solution could be adapted to an Induction Power Board. Normally the cooling system is based on air blower/fans and heatsink/heatsinks. The high power dissipation electronic device like IGBTs/Sic-Mosfets/Bridge Rectifiers/Etc are mounted on the heatsink and the fan generates air flow on them. However, such air flow spreads all over the system.

Within this solution the air flow is bounded to follow the particular shape of the heatsink which leads the air flow directly on the power devices.

The combined effects permits a reduction of the surface temperature of the power devices respect to the standard cooling system.

Moreover such invention can be applied to n Heatsink-Air guide/s for m power device/s, with n,m integers number from 1 to infinite.

As can be seen from Figure 2 an electronic component, like a switch element, particularly and IGBT can be mounted to the heat sink cooling body and – at the same time – on top of the electronic component the heating flank, here in the form of a sheet metal part, is mounted, for example by a screw.

Figure 1

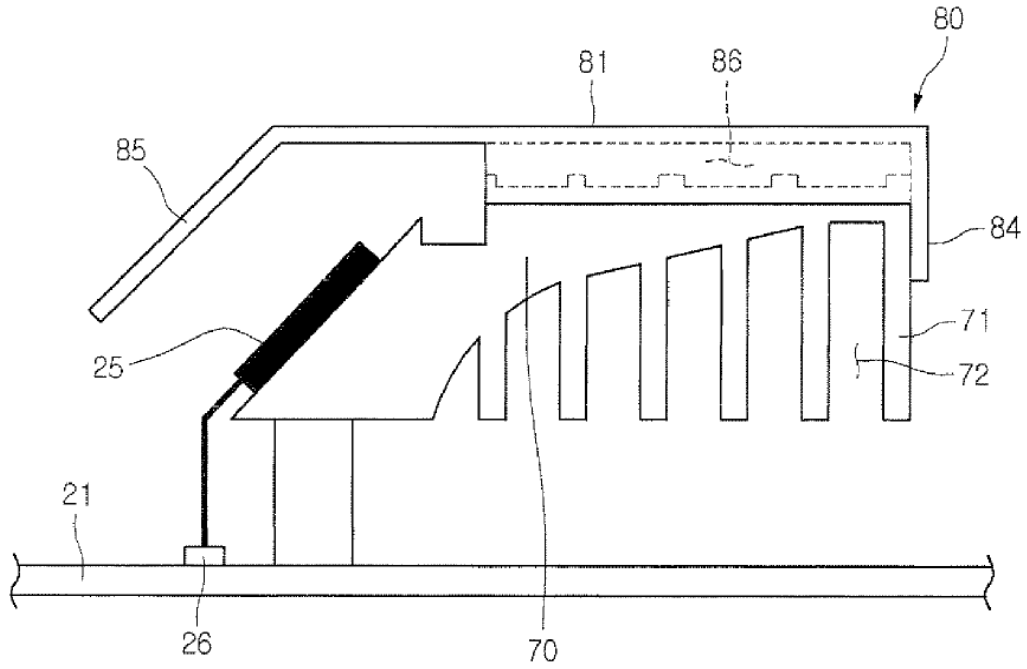

Figure 2