CLAIMS

What is claimed is:

1. A portable induction cooking device, the device comprising:

a generally cylindrical housing having a generally circular top platen surface for supporting a cooking vessel, a bottom wall, and a sidewall defining an interior space, wherein the interior space comprises a first portion and a second portion of the interior space separated by one or more baffles;

the second portion of the interior space being disposed adjacent to the first portion of the interior space, wherein the platen surface extends over the first and second portions of the interior space;

the sidewall comprising a first portion extending along the first portion of the interior space and a second portion extending along the second portion of the interior space;

an intake comprising one or more openings extending through the first portion of the sidewall between the first portion of the interior space and an external environment;

a vent comprising one or more openings extending through the second portion of the sidewall between the second portion of the interior space and the external environment;

one or more fans positioned in the interior space, wherein each of the one or more fans includes an inlet positioned in the first portion of the interior space and an outlet positioned in the second portion of the interior space, wherein the inlet draws air into the fan in a first generally vertical direction, wherein the outlet discharges air out of the fan in a first generally horizontal direction, wherein the one or more fans are configured to draw air into the housing through the intake in a second generally horizontal direction and are further configured to discharge air out of the housing through the vent in a third generally horizontal direction;

at least one induction coil disposed below the platen surface, wherein the at least one induction coil extends at least partially over the first portion of the interior space and further extends at least partially over the second portion of the interior space;

electronics for modulating the power of the at least one induction coil, the electronics being positioned in the second portion of the interior space, at least a portion of the electronics being thermally connected to a heat sink having a series of vertical fins that define channels, the channels

being positioned approximately parallel to the air discharged from the respective outlet of at least one of the one or more fans, the heat sink being positioned adjacent to the respective outlet of the at least one of the one or more fans; and

wherein the device weighs less than 15 pounds.

2. A portable induction cooking device, the device comprising:

a housing having a top platen surface for supporting a cooking vessel, a bottom wall, and a sidewall defining an interior space, wherein the interior space comprises a first portion and a second portion of the interior space separated by one or more baffles;

an intake comprising one or more openings extending through the sidewall between the first portion of the interior space and an external environment;

a vent comprising one or more openings extending through the sidewall between the second portion of the interior space and the external environment;

one or more fans positioned in the interior space, wherein each of the one or more fans includes a first inlet positioned in the first portion of the interior space and a first outlet positioned in the second portion of the interior space, wherein the first inlet draws air into the fan from the first portion of the interior space and the first outlet discharges air out of the fan into the second portion of the interior space, wherein the one or more fans are configured to draw air into the housing through the intake in a first generally horizontal direction and are further configured to discharge air out of the housing through the vent in a second generally horizontal direction;

at least one induction coil disposed below the platen surface, wherein the at least one induction coil extends at least partially over the first portion of the interior space and further extends at least partially over the second portion of the interior space; and

electronics for modulating the power of the at least one induction coil, the electronics being positioned in the second portion of the interior space.

3. The device of Claim 2, wherein the device weighs less than 15 pounds.

4. The device of Claim 2, wherein the device weighs less than 5 pounds.

5. The device of Claim 2, wherein the first inlet of each of the one or more fans draws air into the fan in a generally vertical direction.

6. The device of Claim 2, wherein the first inlet of each of the one or more fans draws air into the fan in a third generally horizontal direction.

7. The device of Claim 2, wherein each of the one or more fans further includes a second inlet positioned in the first portion of the interior space, wherein the first inlet is positioned on a top wall of the respective fan and draws air into the respective fan in a first generally vertical direction, wherein the second inlet is positioned on a bottom wall of the respective fan and draws air into the respective fan in a second generally vertical direction.

8. The device of Claim 2, wherein the first outlet of each of the one or more fans is positioned on a sidewall of the respective fan and discharges air out of the respective fan in a third generally horizontal direction.

9. The device of Claim 2, wherein at least a portion of the electronics are thermally connected to a heat sink.

10. The device of Claim 9, wherein the heat sink has a series of vertical fins that define channels, the channels being positioned approximately parallel to the air discharged from the first outlet of at least one of the one or more fans.

11. The device of Claim 10, wherein the heat sink is positioned adjacent to the first outlet of the at least one of the one or more fans.

12. The device of Claim 2, wherein the housing has a cross-sectional shape that is generally circular, generally rectangular, generally oval, or generally square.

13. The device of Claim 2, wherein the vent is positioned on the sidewall in a location that is opposite of a location of the intake.

14. The device of Claim 2, wherein the size of the intake is at least 30% of the size of a combination of the first inlet and any other inlet of a respective fan of the one or more fans.

15. The device of Claim 2, wherein the size of the intake is at least 45% of the size of a combination of the first inlet and any other inlet of a respective fan of the one or more fans.

16. A method of cooling a portable induction cooking device, the portable induction cooking device comprising a housing that defines an interior space separated by one or more baffles into a first portion and a second portion, wherein the first portion includes one or more intake openings extending through a sidewall of the housing and a first inlet of each of one or more fans, and wherein the second portion includes one or more vent openings extending through the sidewall of the housing and a first outlet of each of the one or more fans, the method comprising:

drawing airflow into the first portion through the one or more intake openings in a first generally horizontal direction;

drawing airflow into each of the one or more fans through the respective first inlet in a first generally vertical direction;

discharging airflow into the second portion out of each of the one or more fans through the respective first outlet in a second generally horizontal direction, and cooling electronics for modulating an induction coil of the portable induction cooking device using at least a portion of the airflow discharged into the second portion, wherein the induction coil extends at least partially over the first portion and further extends at least partially over the second portion; and

further discharging airflow out of the second portion through the one or more vent openings in a third generally horizontal direction.

17. The method of Claim 17, wherein cooling the electronics comprises passing the airflow discharged into the second portion over at least a portion of a heat sink thermally connected to a portion of the electronics.

18. The method of Claim 17, wherein each of the one or more fans further includes a second inlet, and wherein the method further comprises drawing airflow into each of the one or more fans through the respective second inlet in a second generally vertical direction.

19. The method of Claim 17, wherein the portable induction cooking device weighs less than 15 pounds.

20. The method of Claim 17, wherein the portable induction cooking device weighs less than 5 pounds.