CLAIMS

WHAT IS CLAIMED IS:

1. A mattress comprising:

a first layer having a first layer top and a first layer bottom;

a head rail attached to the first layer bottom;

a foot rail attached to the first layer bottom and defining a first recessed portion; and

a first air module configured to create airflow between the first layer top and the first layer bottom, the first air module being positioned in the first recessed portion of the foot rail.

2. The mattress of claim 1, further comprising:

a first side rail extending longitudinally and connecting a first edge of the head rail with a first edge of the foot rail;

a second side rail opposite the first side rail, extending longitudinally, and connecting a second edge of the head rail with a second edge of the foot rail; and

one or more additional layers positioned under the first layer bottom between the first side rail and the second side rail, wherein the one or more additional layers comprises:

a core, and

a second layer positioned under the core and covering the core between the first side rail and the second side rail.

3. The mattress of claim 2, further comprising a thermal layer attached to the first layer bottom, wherein the thermal layer (i) is configured to extend a first distance longitudinally between the head rail and the foot rail and (ii) is offset a second distance from at least one of the first side rail and the second side rail.

4. The mattress of claim 3, further comprising an air duct hose configured to fluidly connect the first air module to the thermal layer.

5. The mattress of claim 4, wherein the first air module is configured to draw air from the thermal layer through the air duct hose, and discharge the drawn air out into the foot rail.

6. The mattress of claim 1, wherein the first air module is configured to draw air from the first layer and direct exhaust air into the foot rail of the mattress.

7. The mattress of claim 1, wherein the first recessed portion is configured to at least partially receive the first air module.

8. The mattress of claim 1, wherein the first air module includes:

a housing that defines an air inlet and an air outlet; and

a fan assembly enclosed in the housing and configured to suction air through the air inlet and supply exhaust air through the air outlet.

9. The mattress of claim 1, further comprising:

a second recessed portion defined in the foot rail proximate the first recessed portion; and

a second air module configured to create airflow and positioned inside the second recessed portion of the foot rail.

10. The mattress of claim 9, wherein the second air module is configured to draw air from the first layer and direct exhaust air in a same direction in the foot rail as exhaust air that is directed by the first air module.

11. The mattress of claim 9, wherein the second air module is configured to draw air from the first layer and direct exhaust air in a different direction in the foot rail as exhaust air that is directed by the first air module.

12. The mattress of claim 1, wherein the first air module is configured to draw air from the first layer and direct exhaust air into the foot rail towards an interior of the mattress.

13. A mattress comprising:

a first foam layer having a top surface and an opposite bottom surface;

an inflatable chamber positioned below the bottom surface of the first foam layer;

a foam rail structure including a head portion, a foot portion, and first and second side portions, the foam rail structure extending from a periphery of the first foam layer around a perimeter of the mattress and configured to surround the inflatable chamber;

a mattress bottom that covers the inflatable chamber, and

an air source configured to create airflow and positioned under the inflatable chamber, above the mattress bottom, and in the foot portion of the foam rail structure.

14. The mattress of claim 13, wherein the air source is a first air module.

15. The mattress of claim 14, further comprising:

a second foam layer positioned under the inflatable chamber and covering at least a portion of the inflatable chamber between the head portion, the foot portion, and the first and second side portions of the foam rail structure,

wherein the air source is configured to draw air from the second foam layer and direct exhaust air into the foot portion of the foam rail structure.

16. The mattress of claim 13, wherein the air source is configured to draw air from the first foam layer and direct exhaust air into the foot portion of the foam rail structure and towards the first side portion or the second side portion of the foam rail structure.

17. The mattress of claim 13, wherein the foot portion of the foam rail structure defines a first rail recessed portion configured to receive the air source.

18. The mattress of claim 13, wherein:

the foot portion of the foam rail structure has a first width,

the head portion of the foam rail structure has a second width,

the first and second portions of the foam rail structure have a third width, and

the first width is greater than the second and third widths, and the second width is less than the third width.

19. The mattress of claim 13, wherein the air source includes:

a housing that defines an air inlet and an air outlet;

a fan assembly enclosed in the housing and configured to suction air through the air inlet and supply exhaust air through the air outlet;

one or more sensors configured to generate signals representative of at least one of temperature, humidity, and flame;

a controller included in the housing that is configured to control operations of the fan assembly and receive the signals from the one or more sensors; and

wiring that is electrically connected to the controller and the fan assembly, wherein the wiring extends from the housing and is configured to electrically connect to a power source external to the mattress and supply electrical power to the controller and the fan assembly.

20. The mattress of claim 13, wherein the inflatable chamber is a mattress core.