THERMAL CYCLER APPARATUS AND RELATED METHODS

TECHNICAL FIELD

[0001] The present disclosure relates generally to an apparatus for thermal cycling. Certain embodiments relate more specifically to a method of manufacturing an apparatus and a method of using the apparatus.

SUMMARY

[0001a] In one aspect, there is provided a thermal cycler apparatus, comprising:

a heat sink;

a plurality of peltier devices over the heat sink;

a pair of first and second base plates over each peltier device; and

a well block comprising a plurality of zones, each zone comprising first adjacent wells and second adjacent wells;

wherein each first adjacent wells and each second adjacent wells are respectively over the first base plate and the second base plate such that one peltier device provides for heat transfer for one; and

wherein the first base plate and the second base plate are separated from each other by a space through which wires extending from the peltier device extend.

BRIEF DESCRIPTION OF THE DRAWINGS

[0002] The written disclosure herein describes illustrative embodiments that are non-limiting and non-exhaustive. Reference is made to certain of such illustrative embodiments that are depicted in the figures, in which:

[0003] FIG. 1 is a perspective view of a sample plate above a thermal cycler apparatus.

[0004] FIG. 2 is a perspective view of the sample plate on a thermal cycler apparatus with a partial cut-away view.

[0005] FIG. 3 is a cross-sectional view of the sample plate on the thermal cycler apparatus taken along cutting line 3—3 in FIG. 2.

[0006] FIG. 4 is an isolated sectional view taken along cutting line 4—4 in FIG. 2 of the thermal cycler apparatus.

[0007] FIG. 5 is an exploded perspective of the sections shown in FIG. 4 of the sample plate on the thermal cycler apparatus.

[0008] FIG. 6 is a cross-sectional side view taken along cutting line 6—6 in FIG. 4 of the embodiment of the thermal cycler apparatus and sample plate that are shown in FIGS. 1-5.

[0009] FIG. 7 is a cross-sectional side view of a different embodiment of thermal cycler apparatus.

[0010] FIG. 8A is a cross-sectional side view of another embodiment of a thermal cycler apparatus.

[0011] FIG. 8B is a perspective view of the embodiment of a thermal cycler apparatus shown in FIG. 8A with a cross-sectional view to show a clamp.

[0012] FIG. 9 is a cross-sectional side view of an additional embodiment of a thermal cycler apparatus.

[0013] FIG. 10 is a cross-sectional side view of another embodiment of a thermal cycler apparatus.