

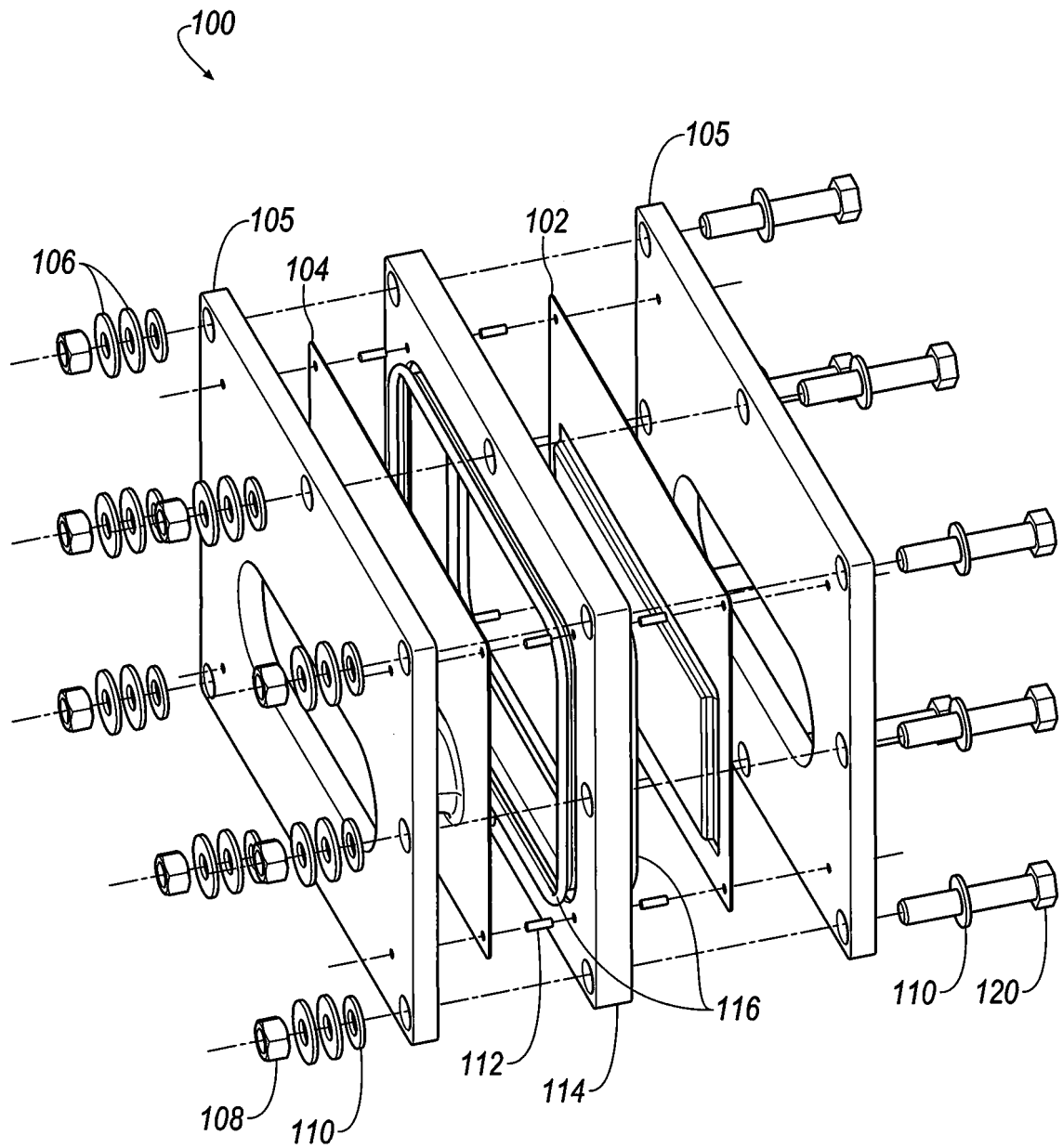


FIG. 1



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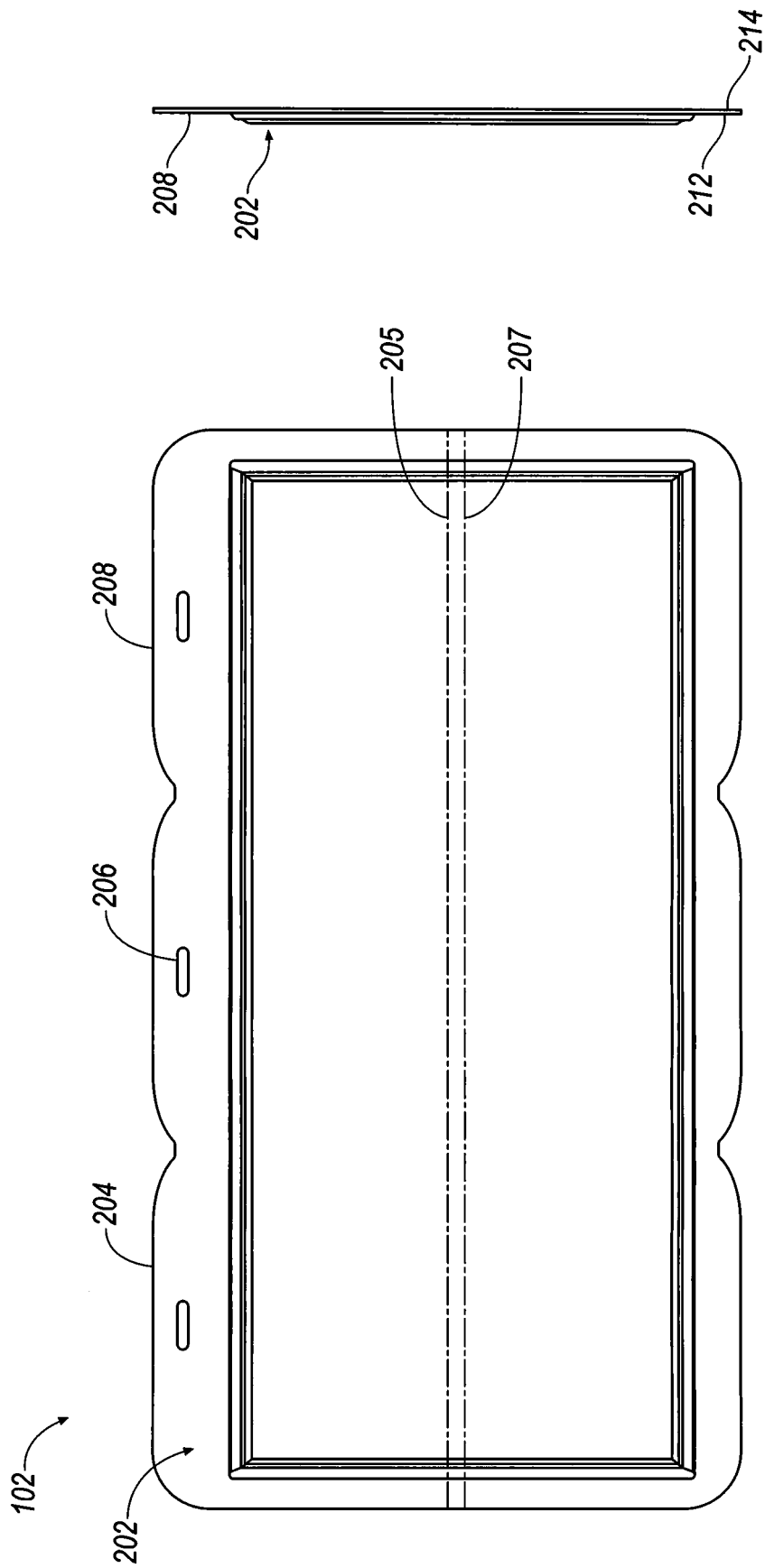
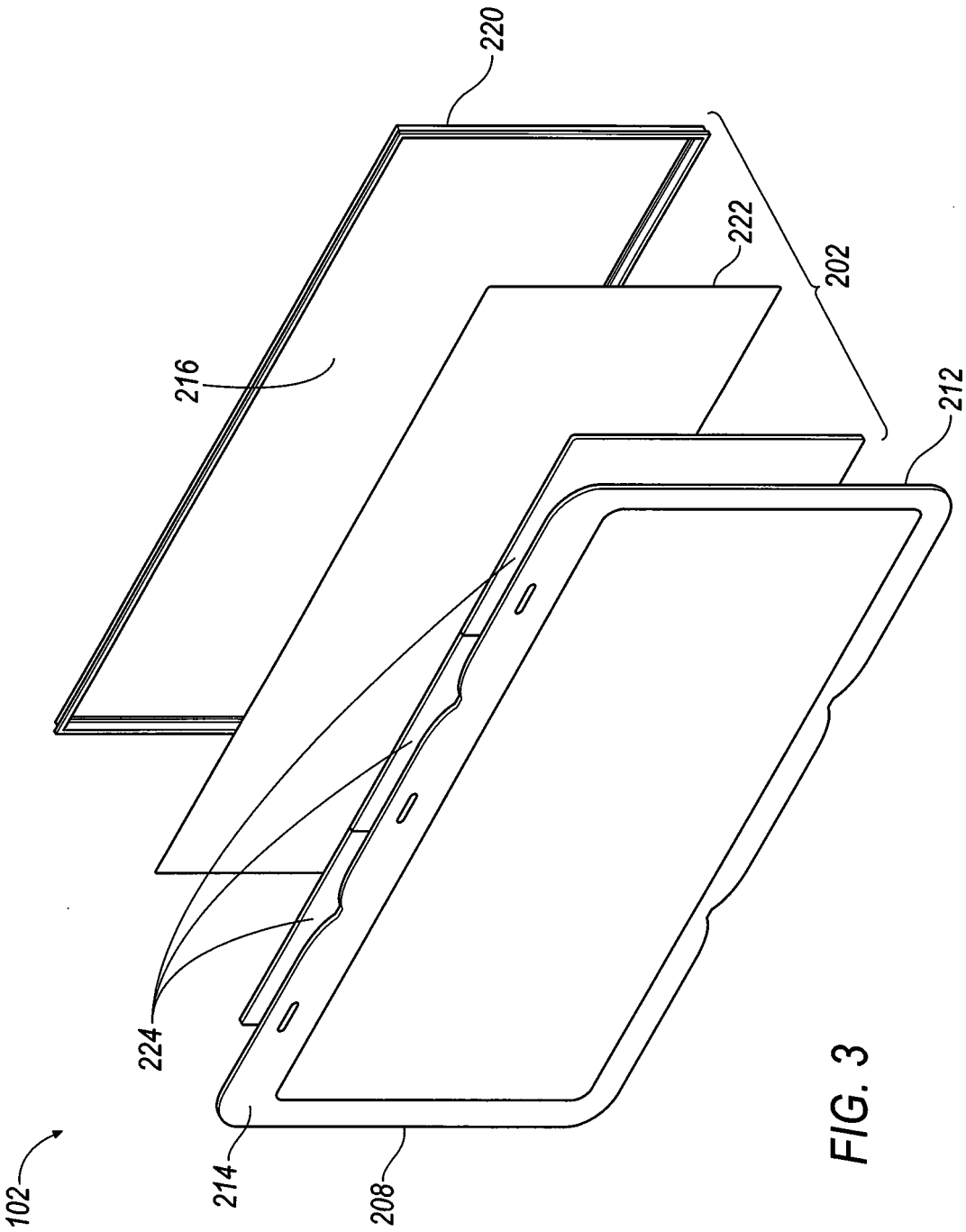


FIG. 2B

FIG. 2A

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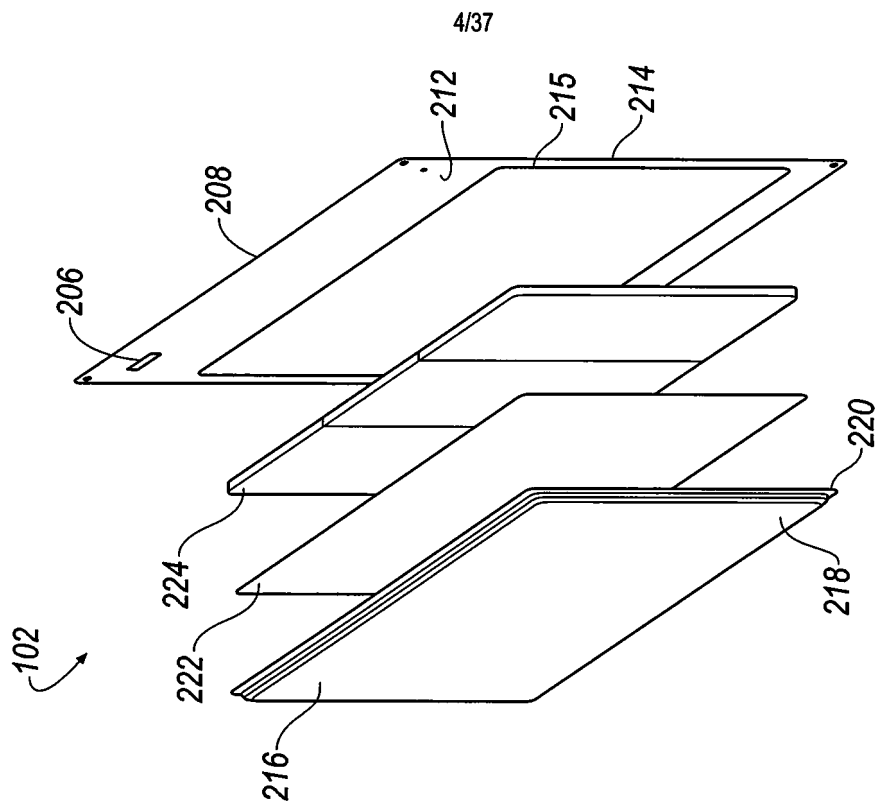


FIG. 4A

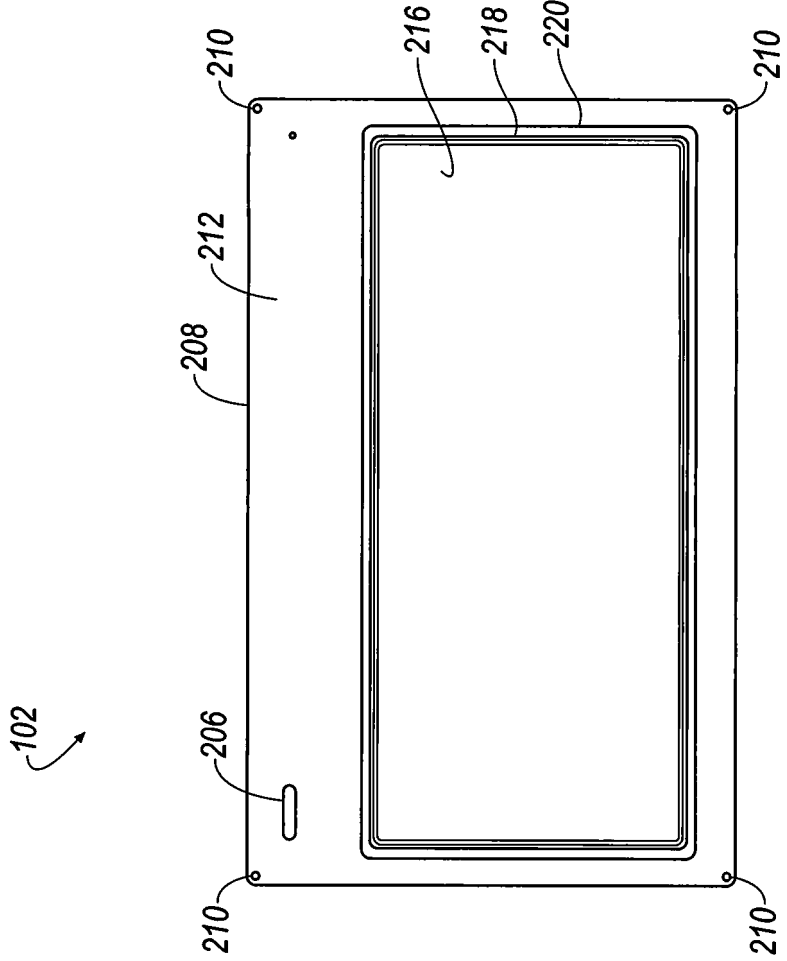


FIG. 4B

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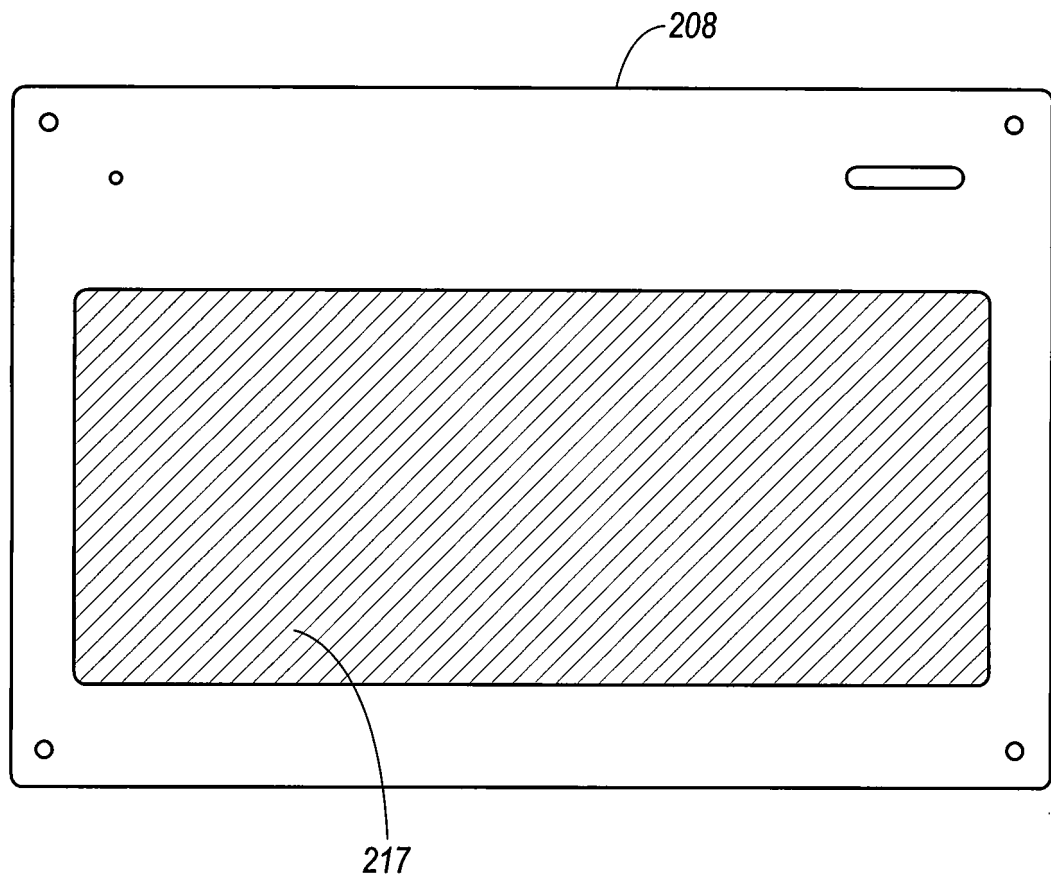


FIG. 5

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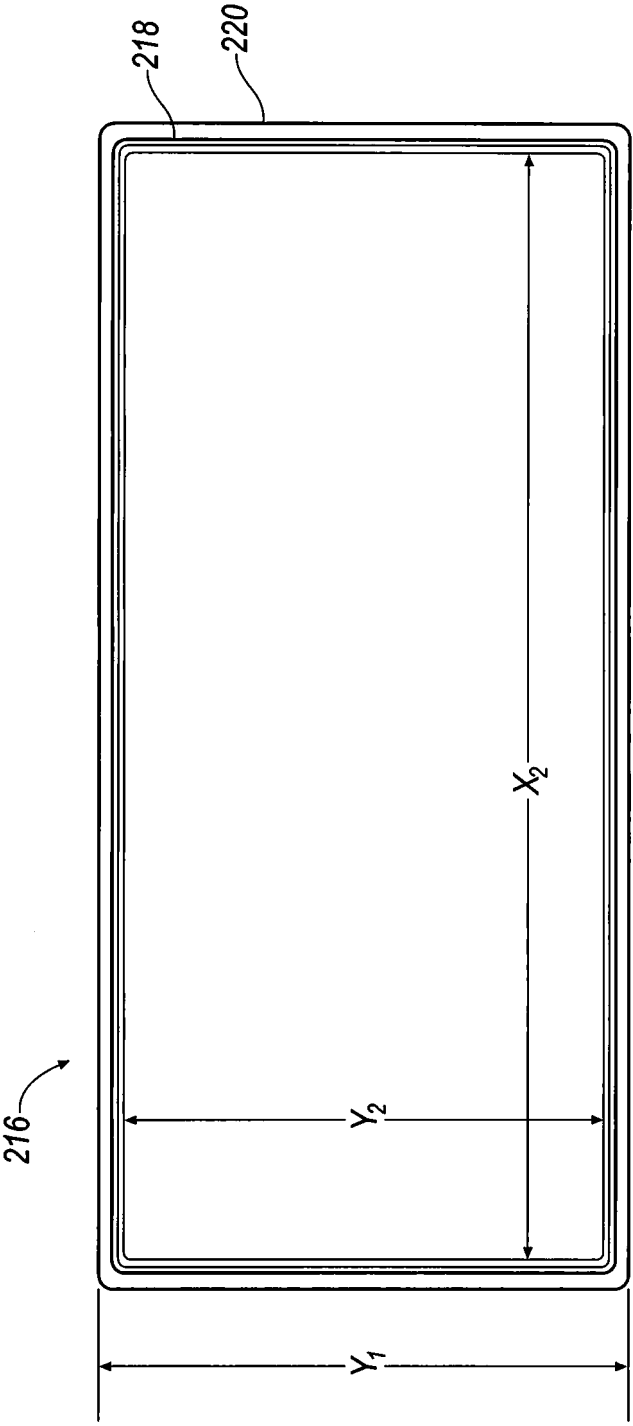


FIG. 6A

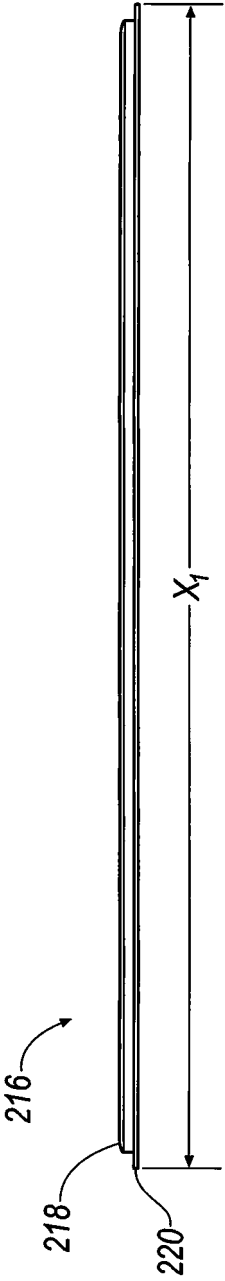


FIG. 6B

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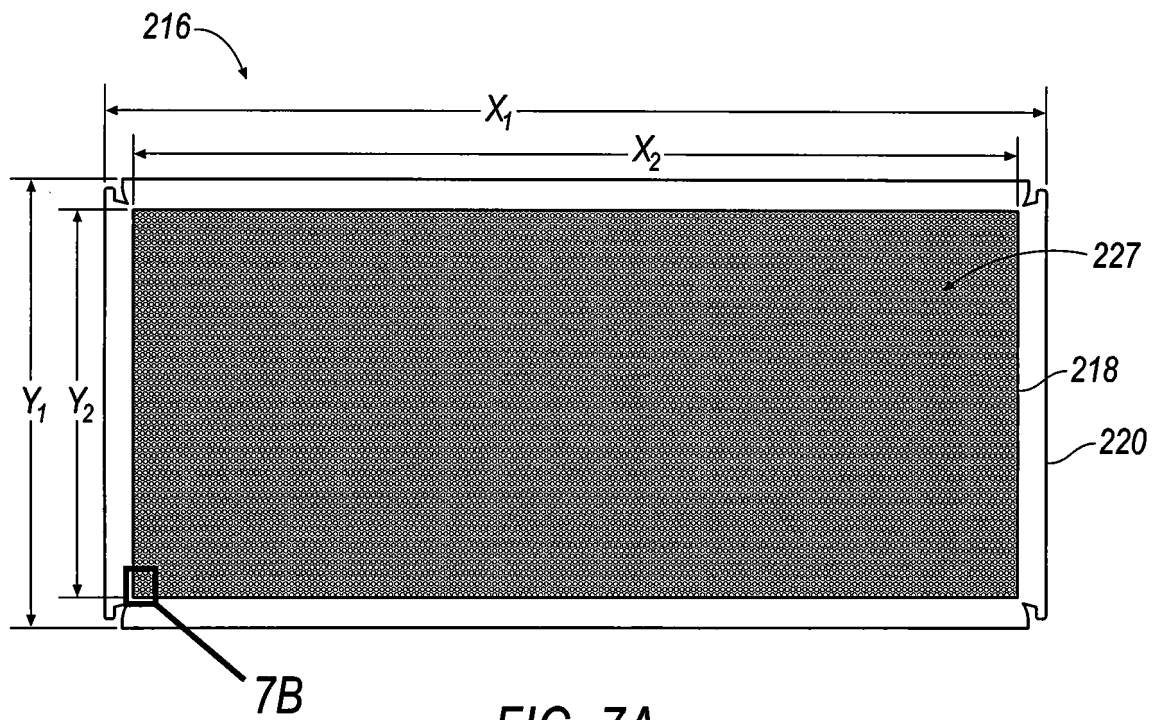


FIG. 7A

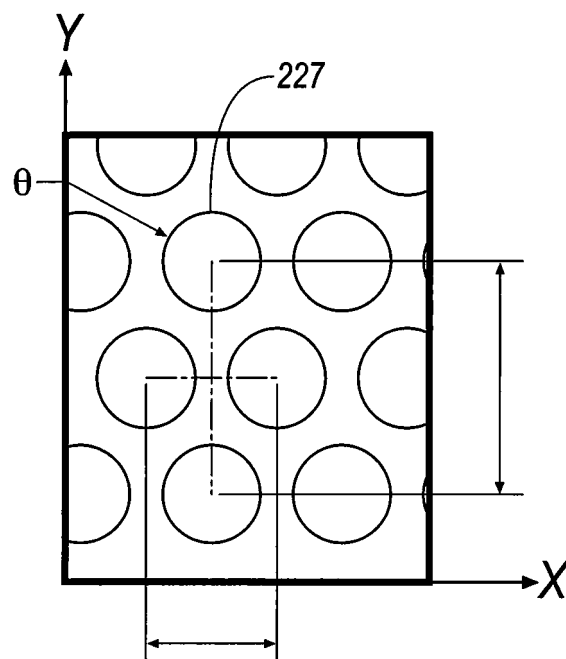


FIG. 7B

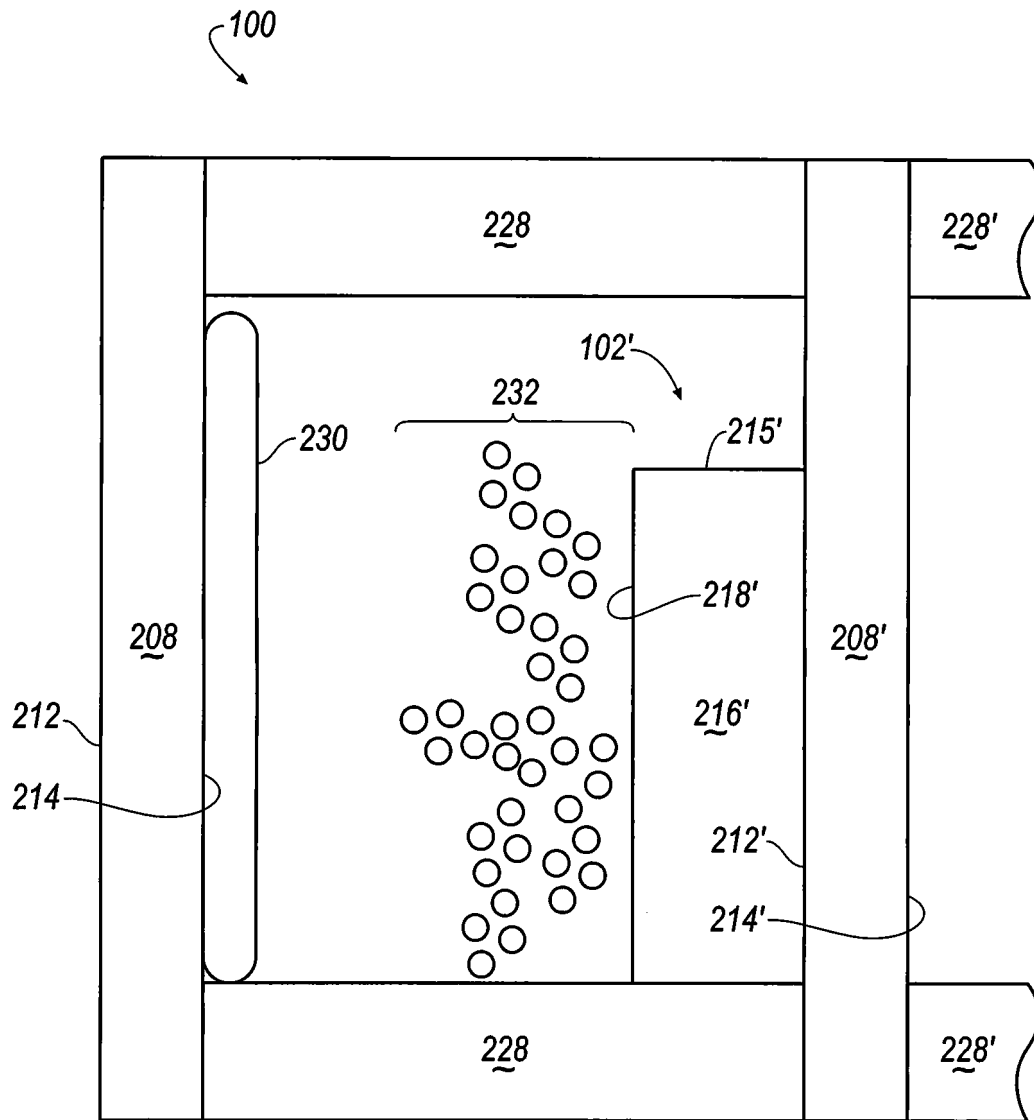


FIG. 8

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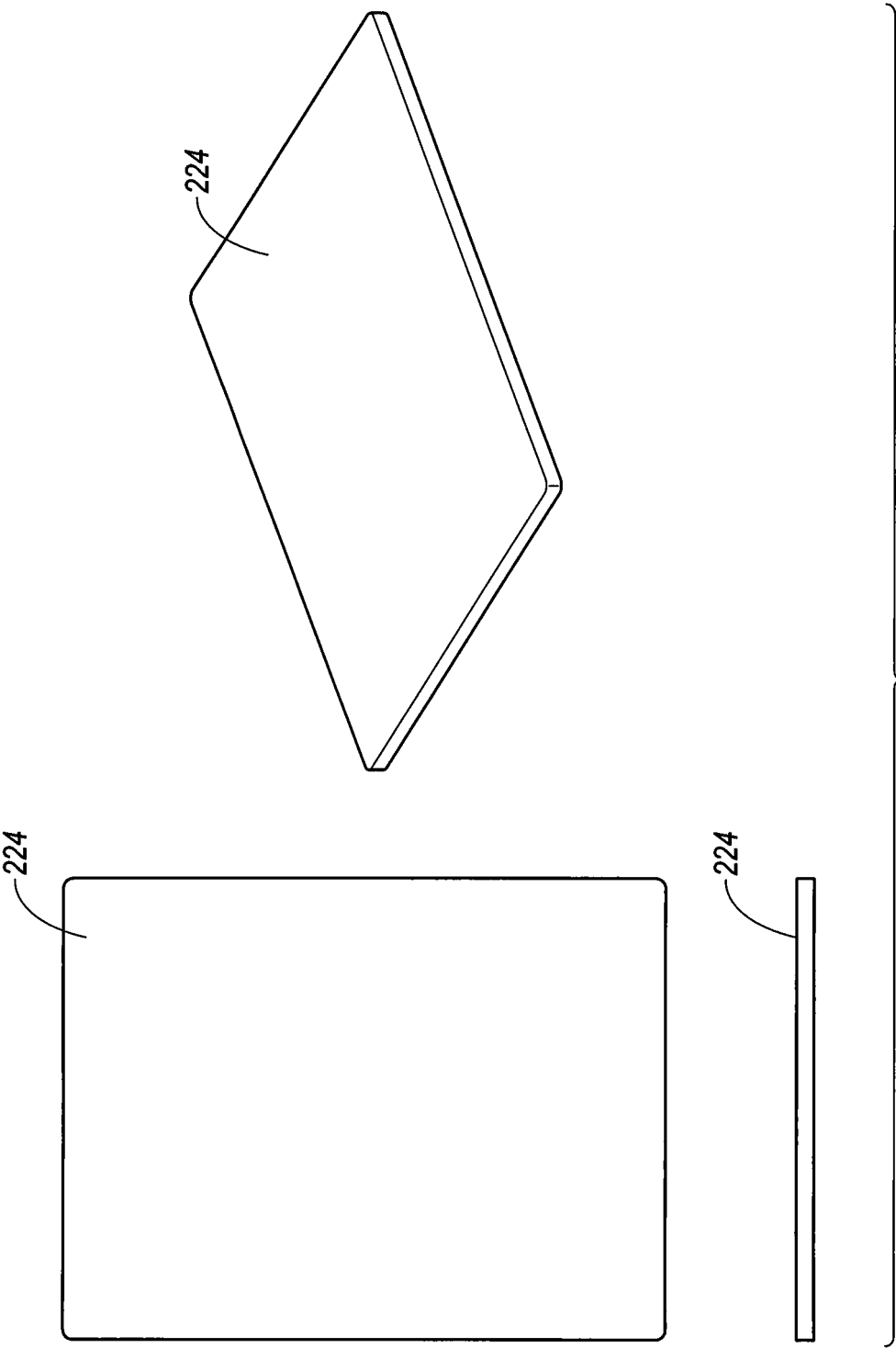
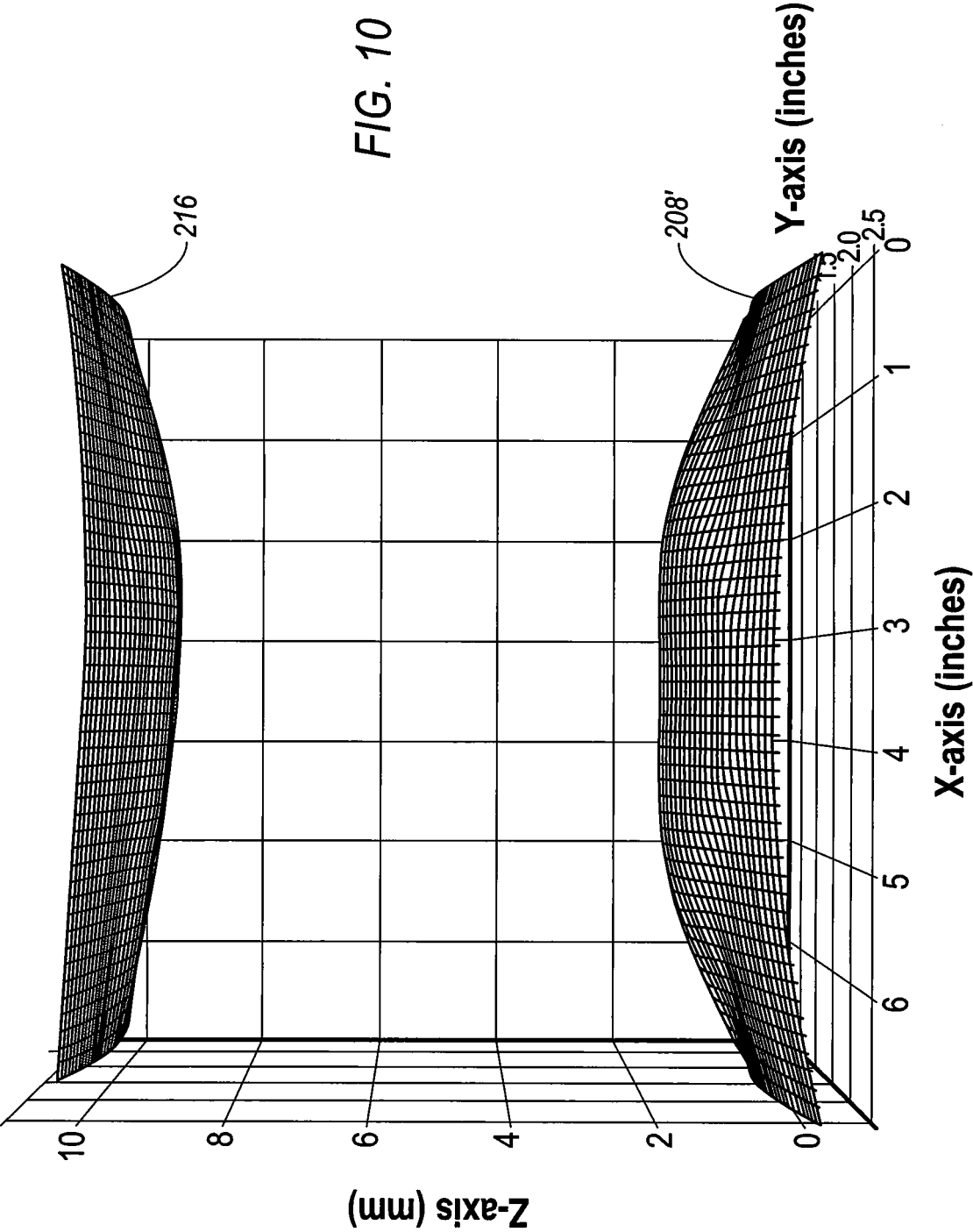


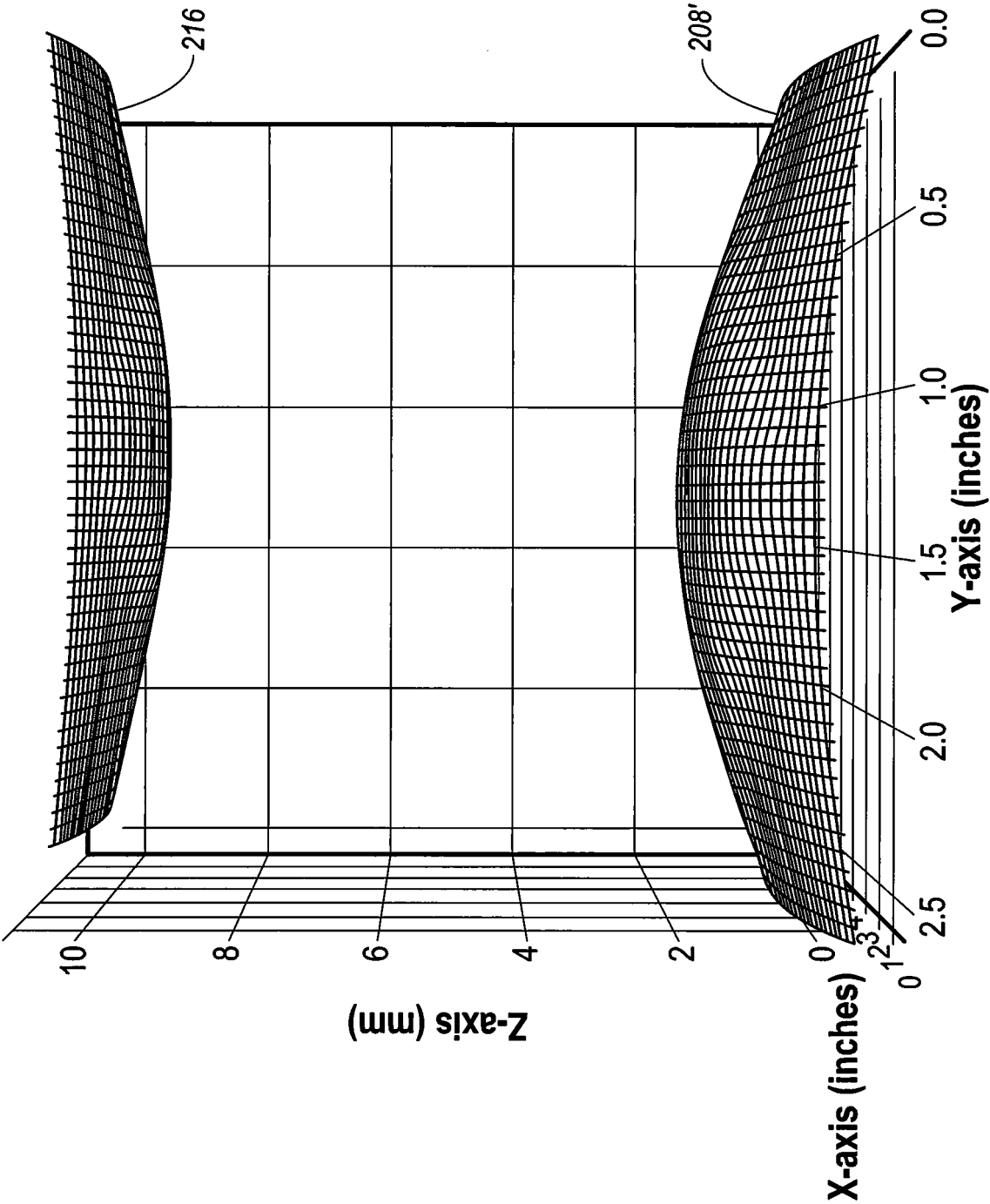
FIG. 9

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FIG. 11



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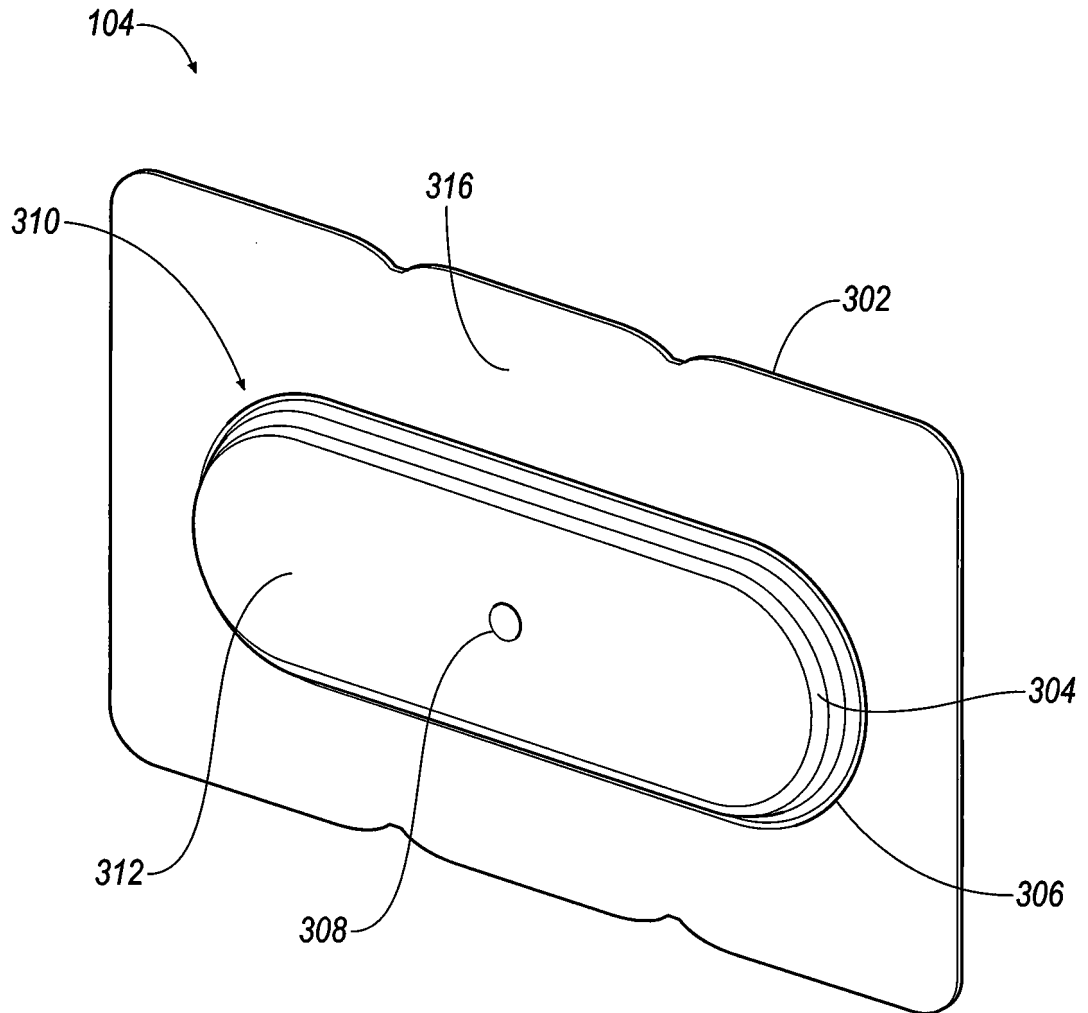


FIG. 12

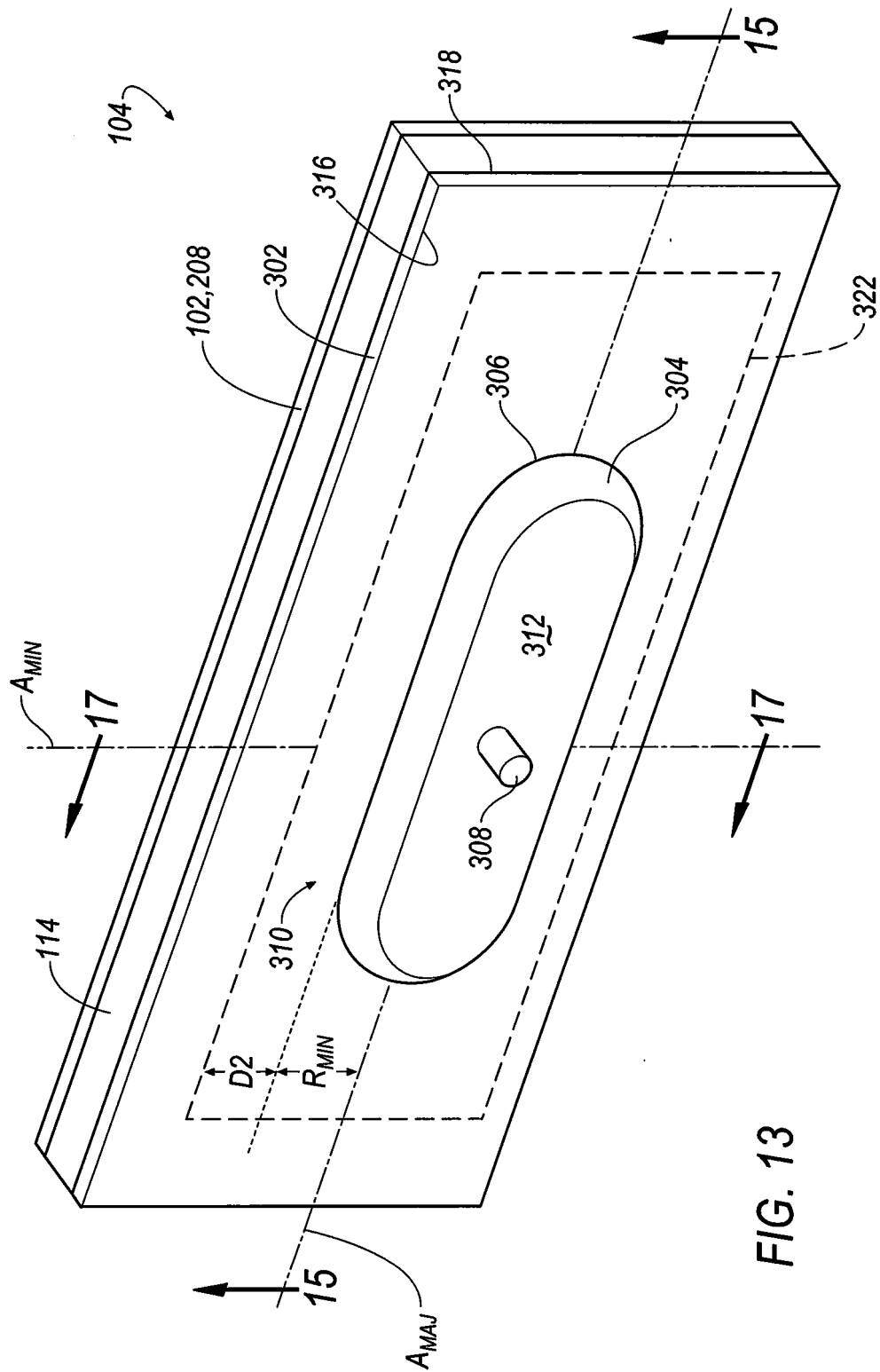


FIG. 13

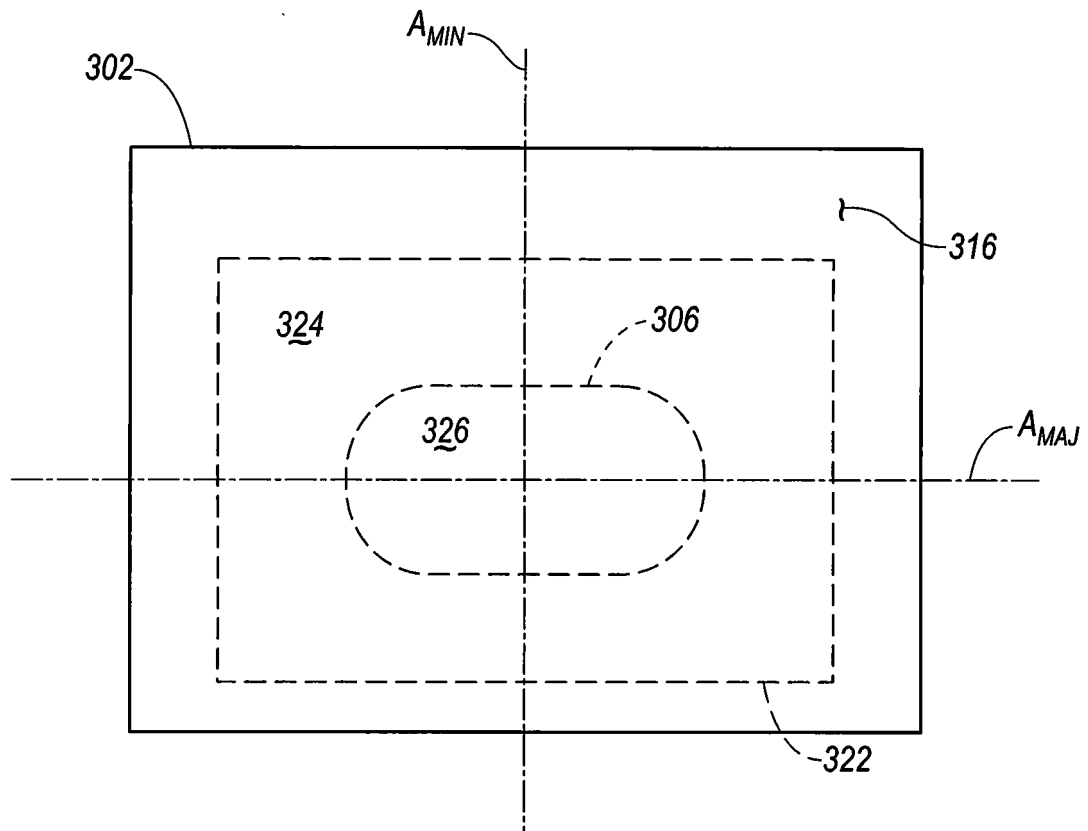


FIG. 14

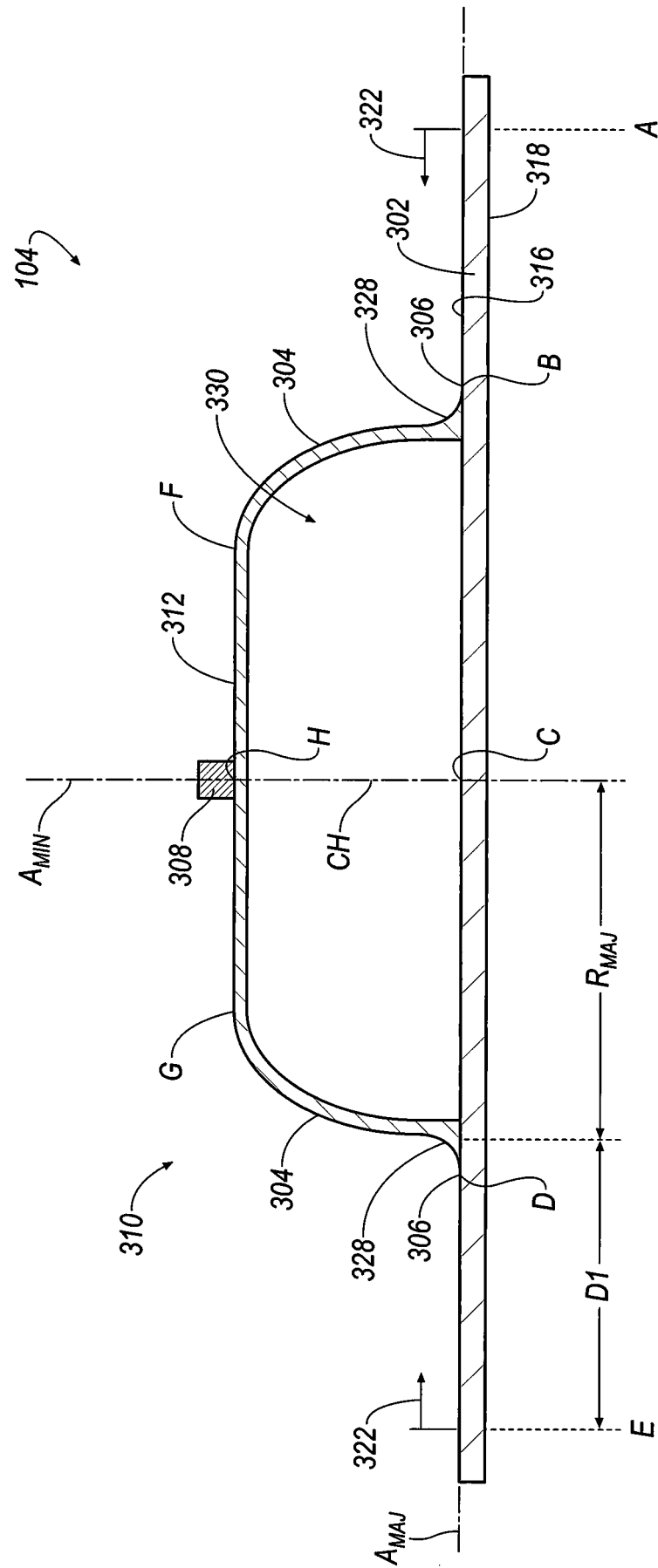


FIG. 15

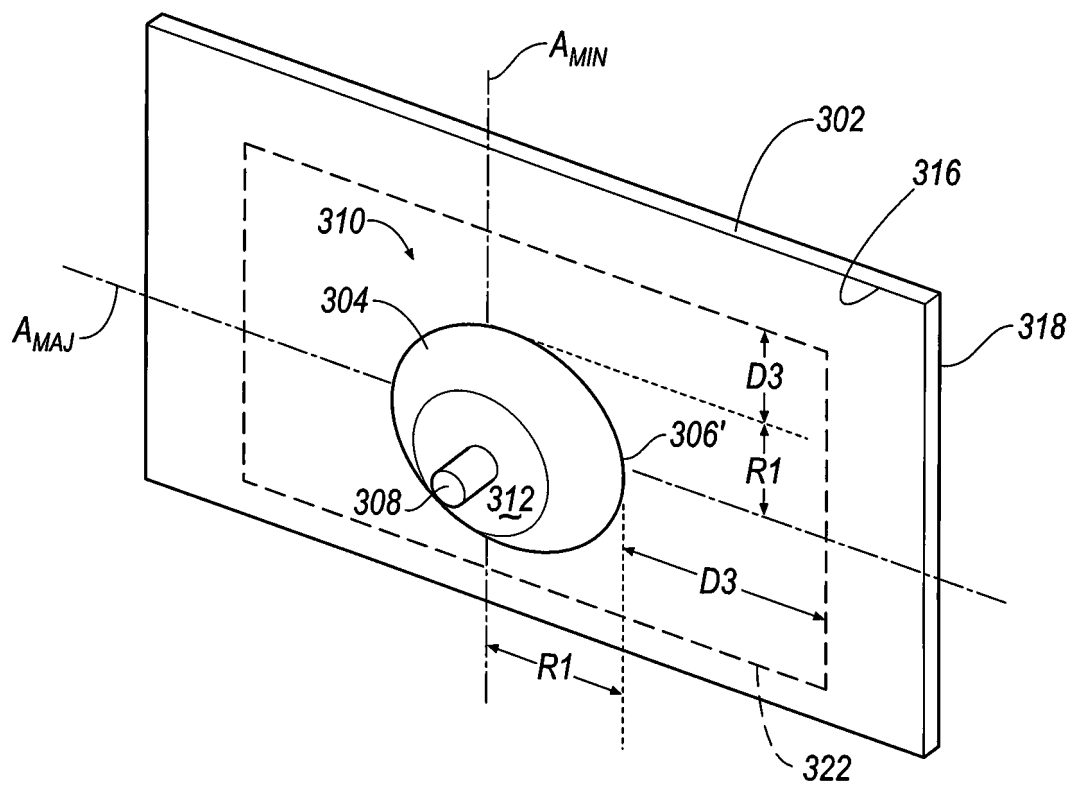


FIG. 16

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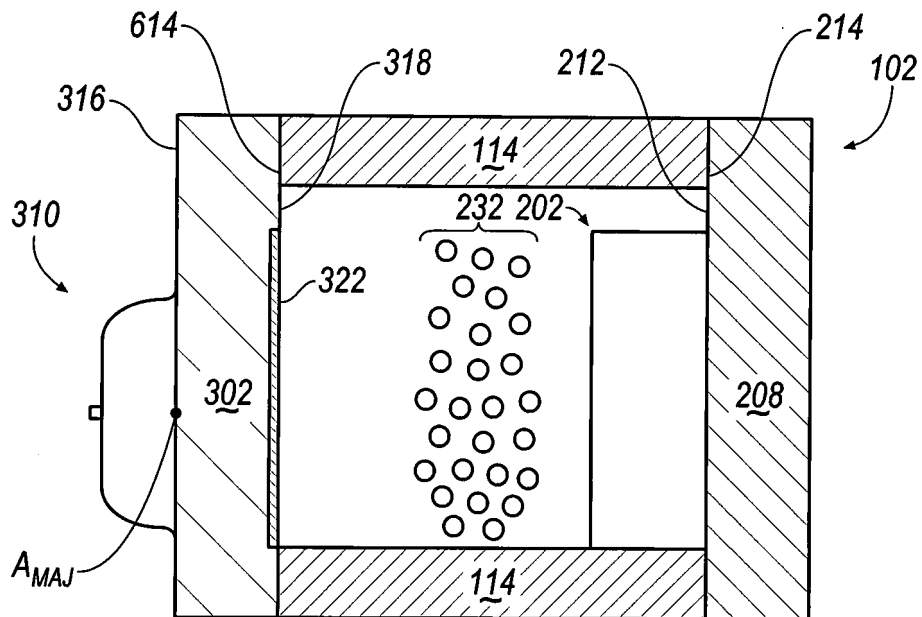


FIG. 17

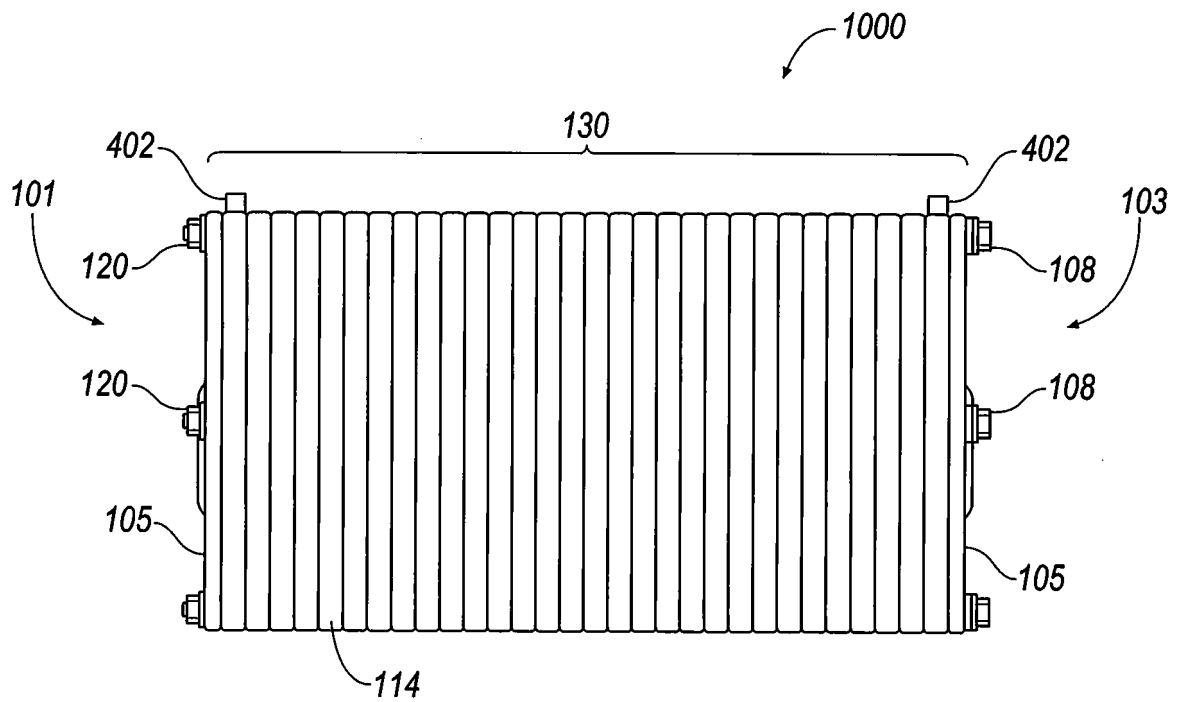


FIG. 18

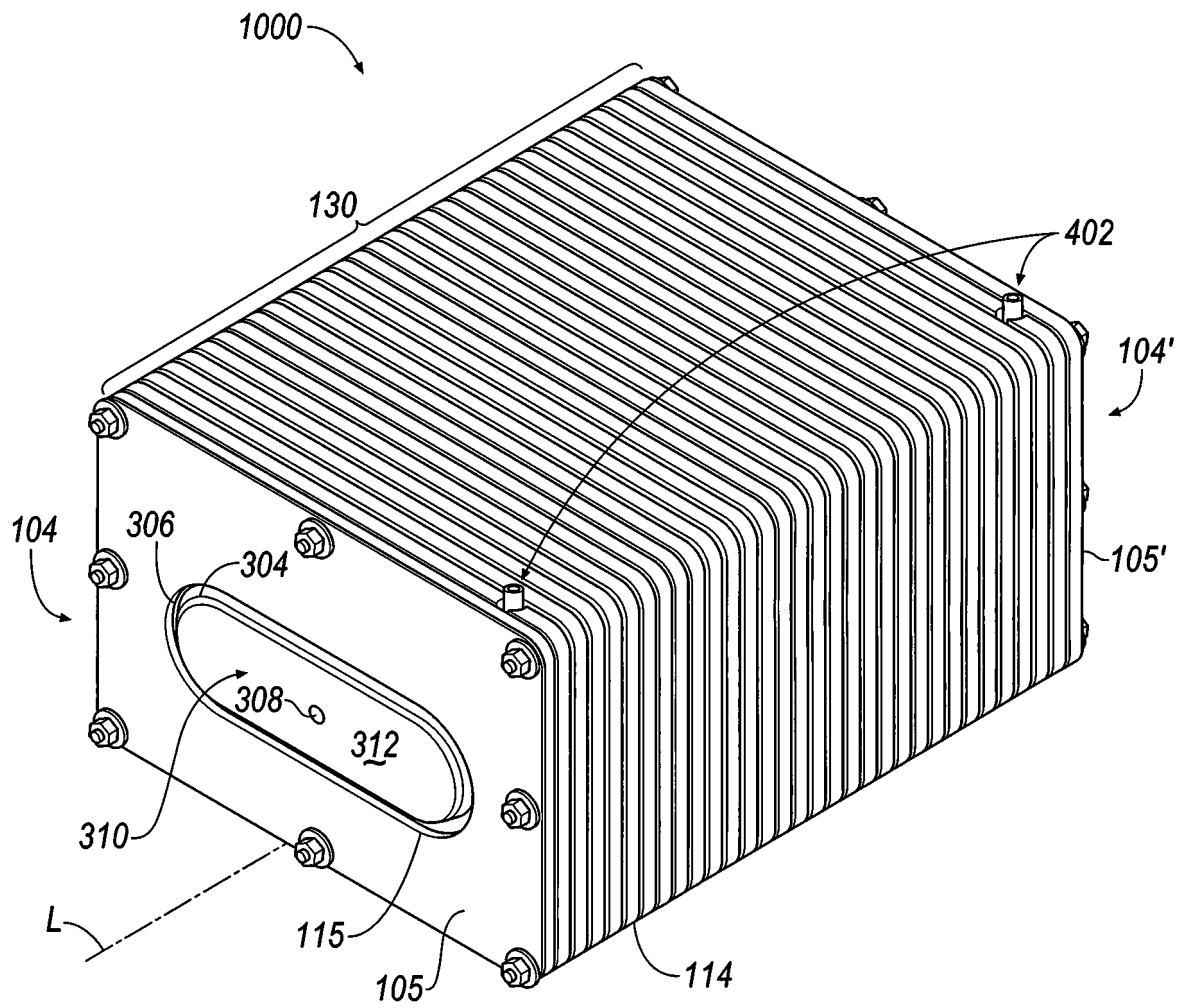


FIG. 19

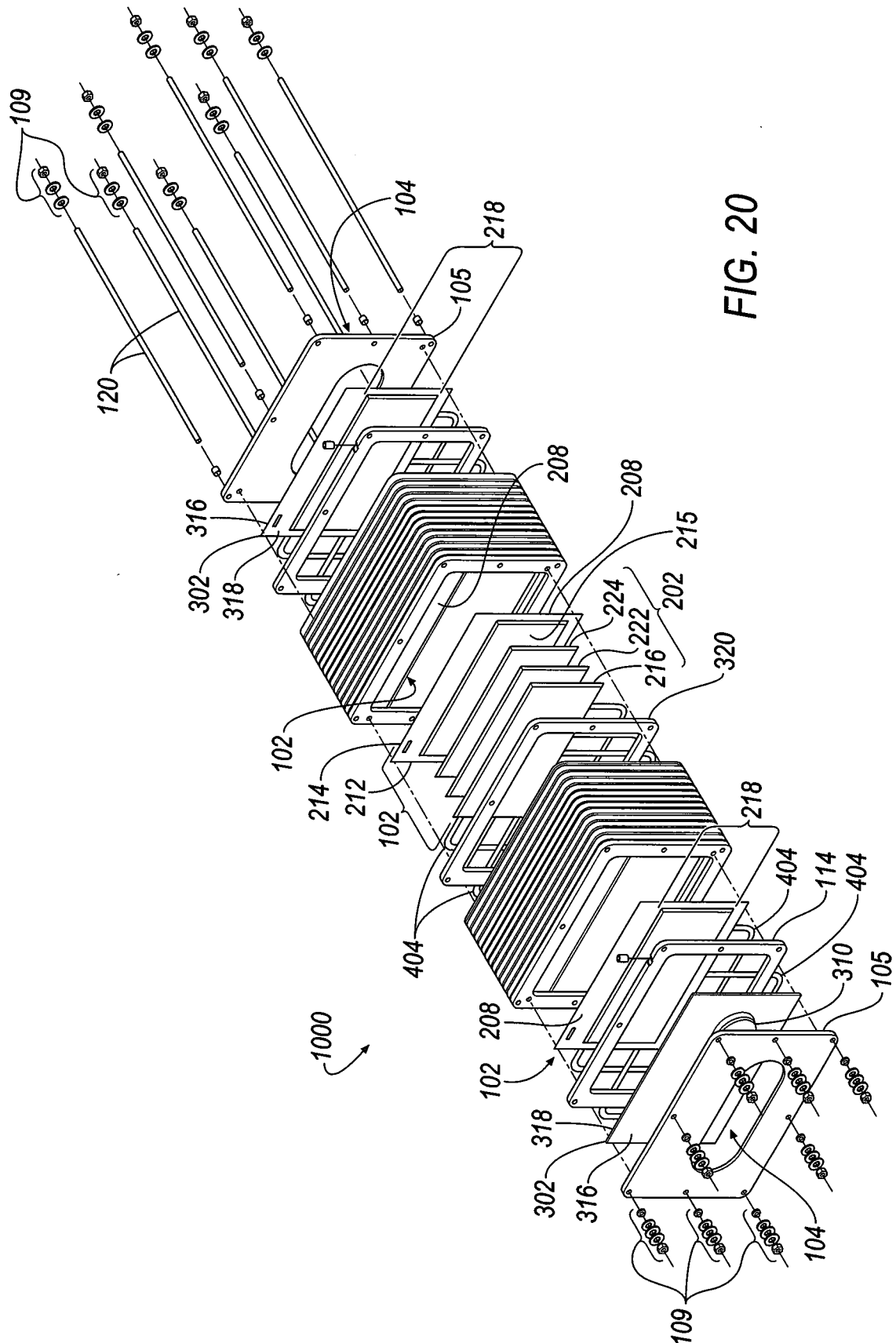
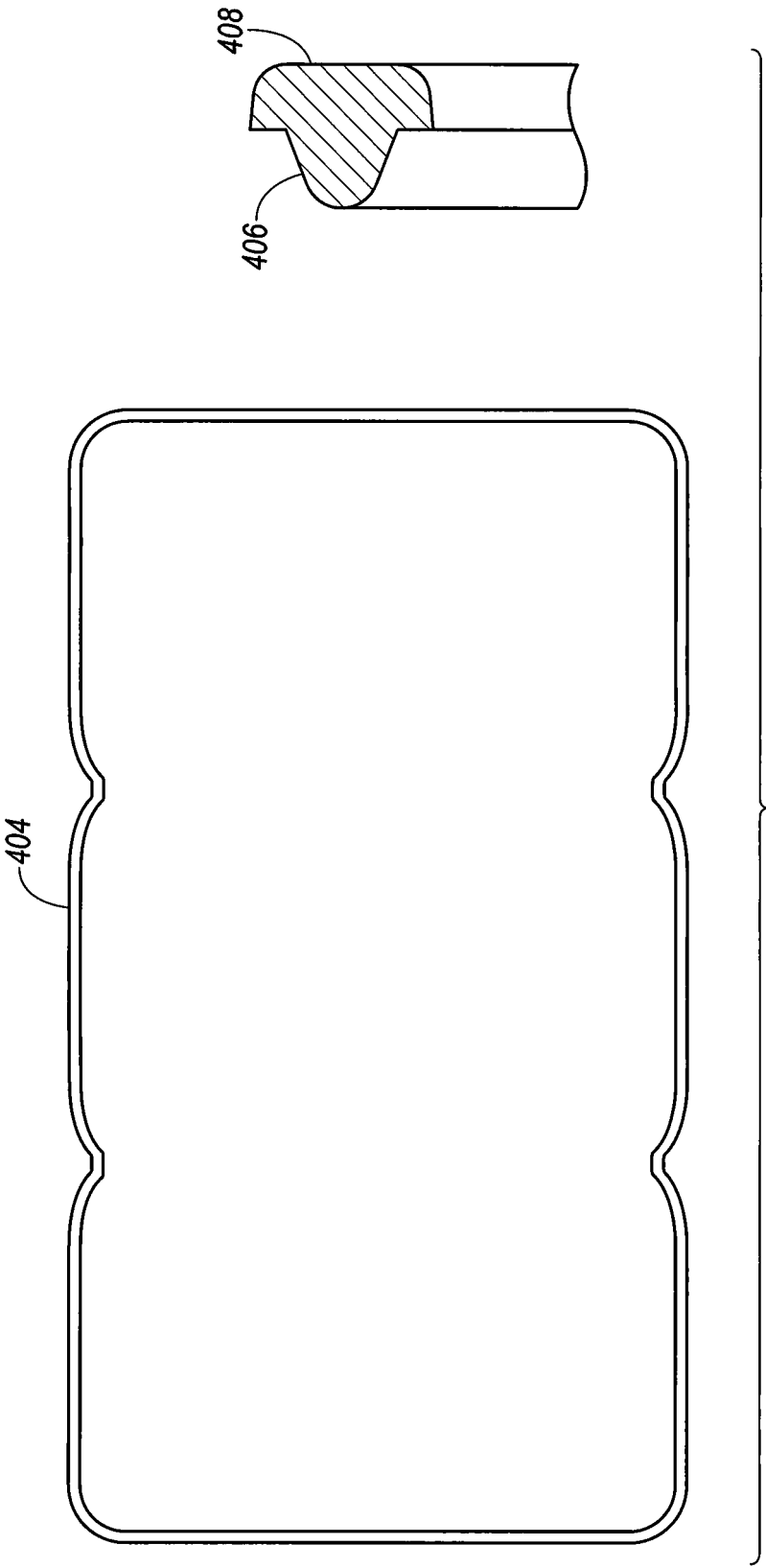


FIG. 20

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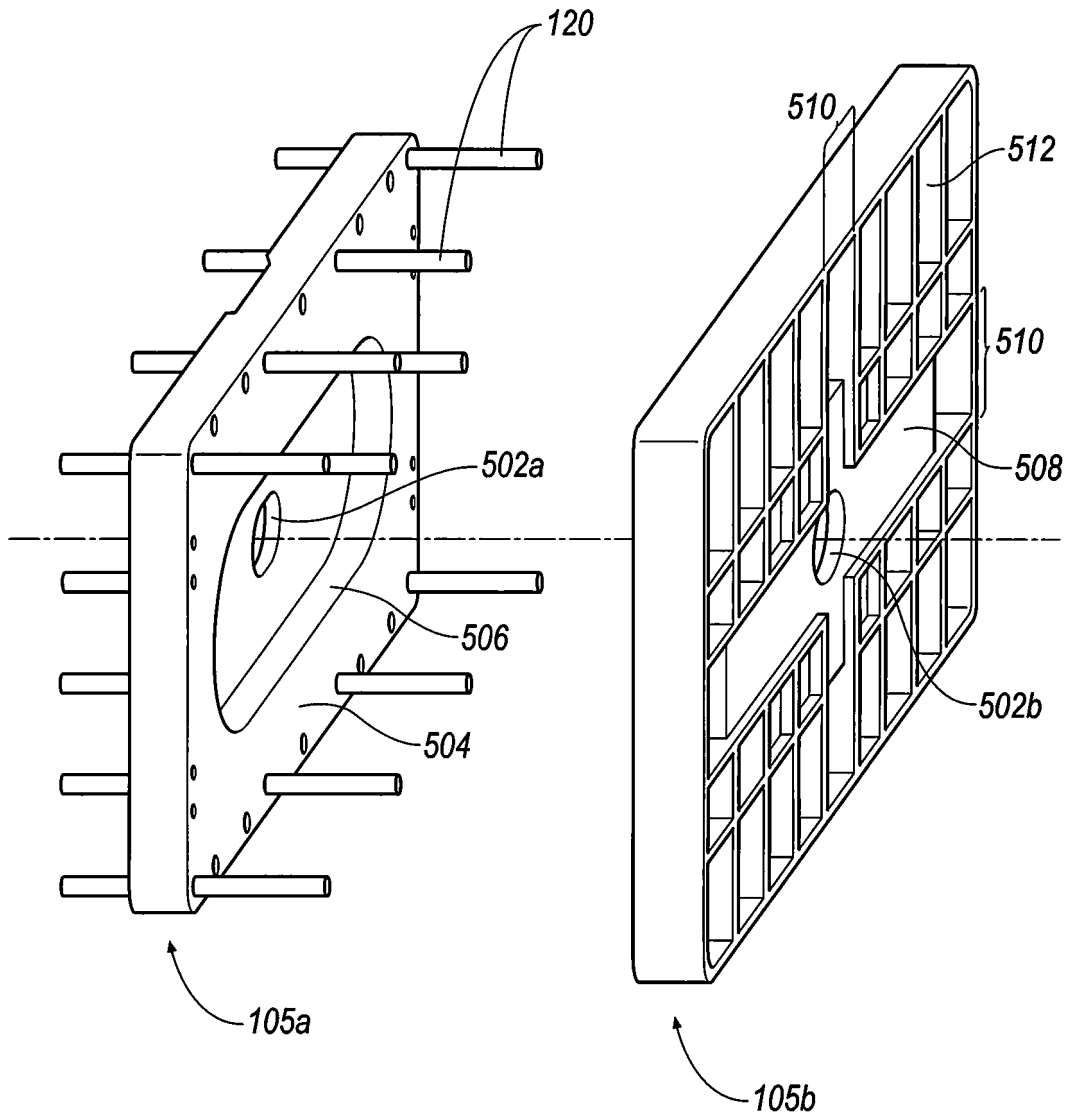


FIG. 22

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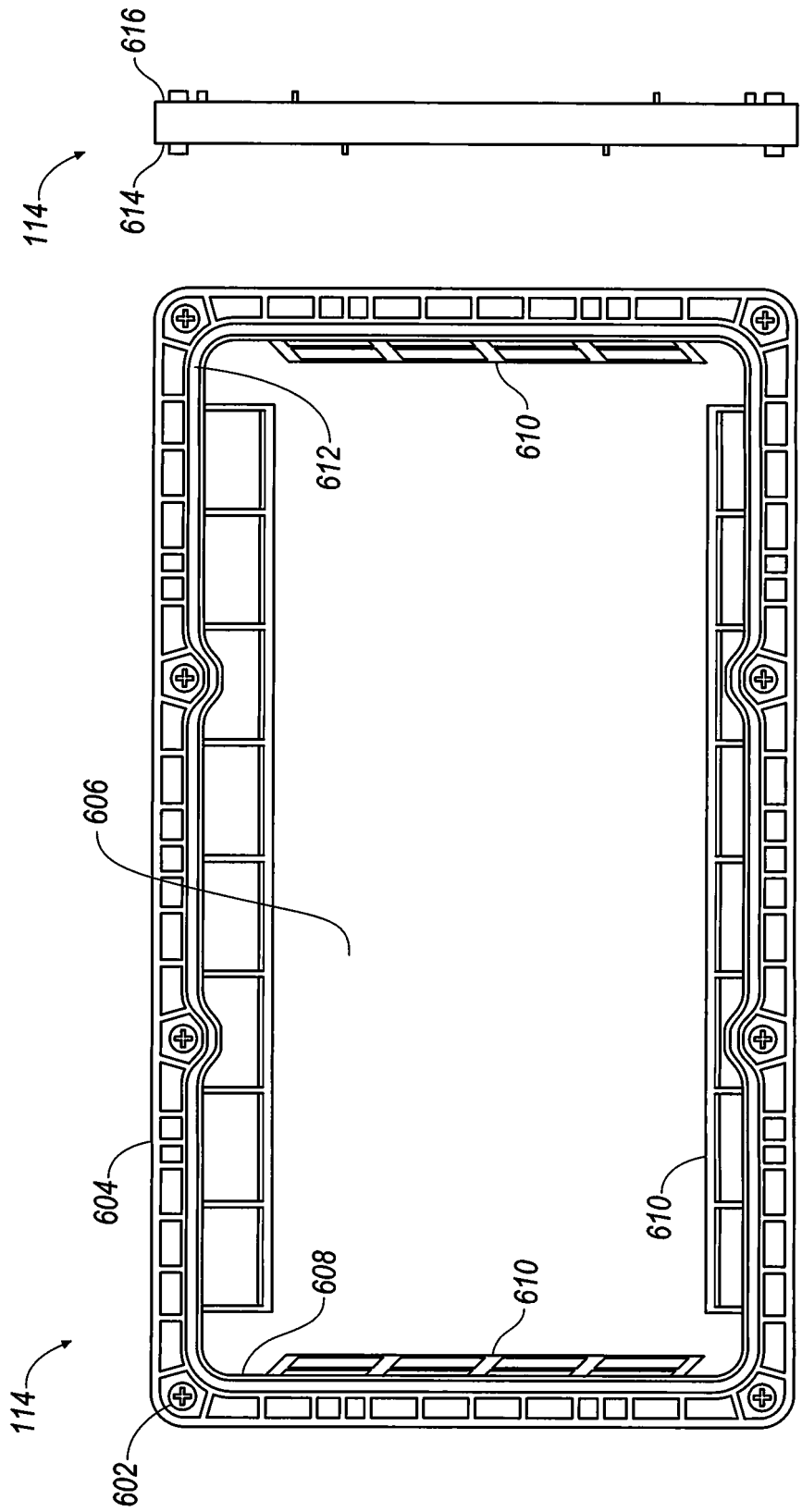


FIG. 23

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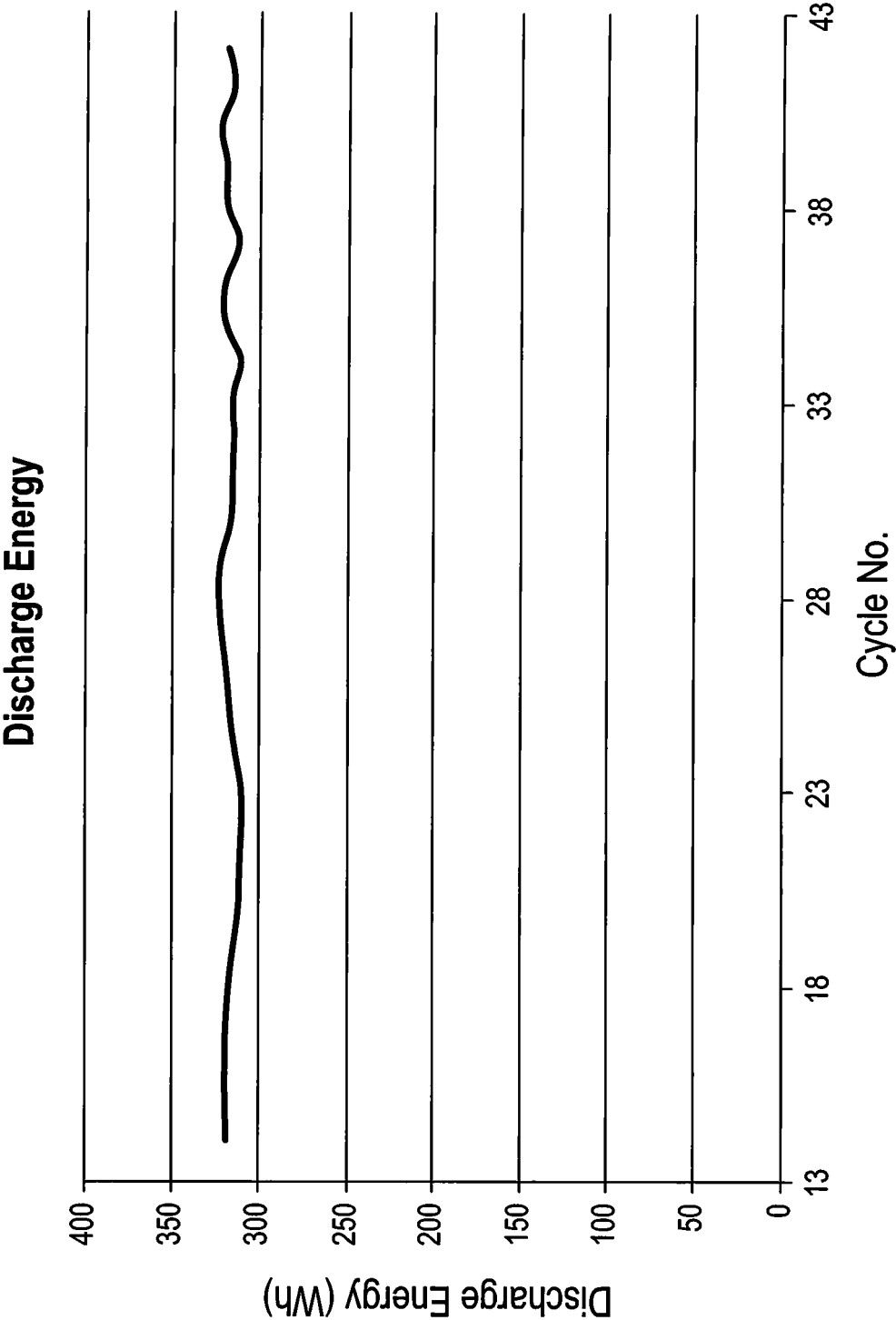
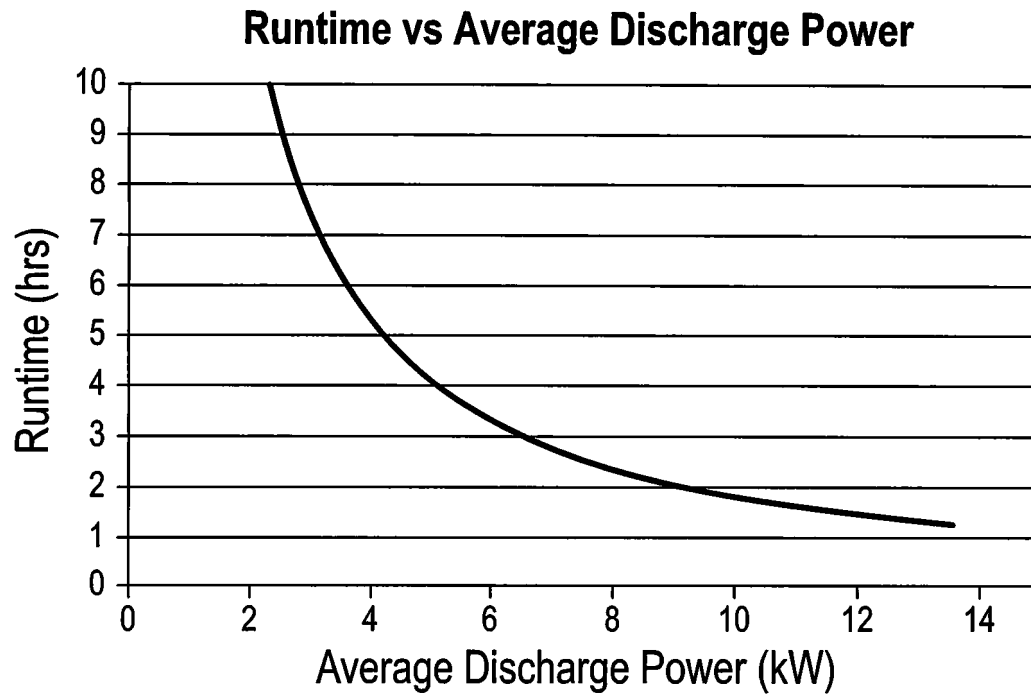
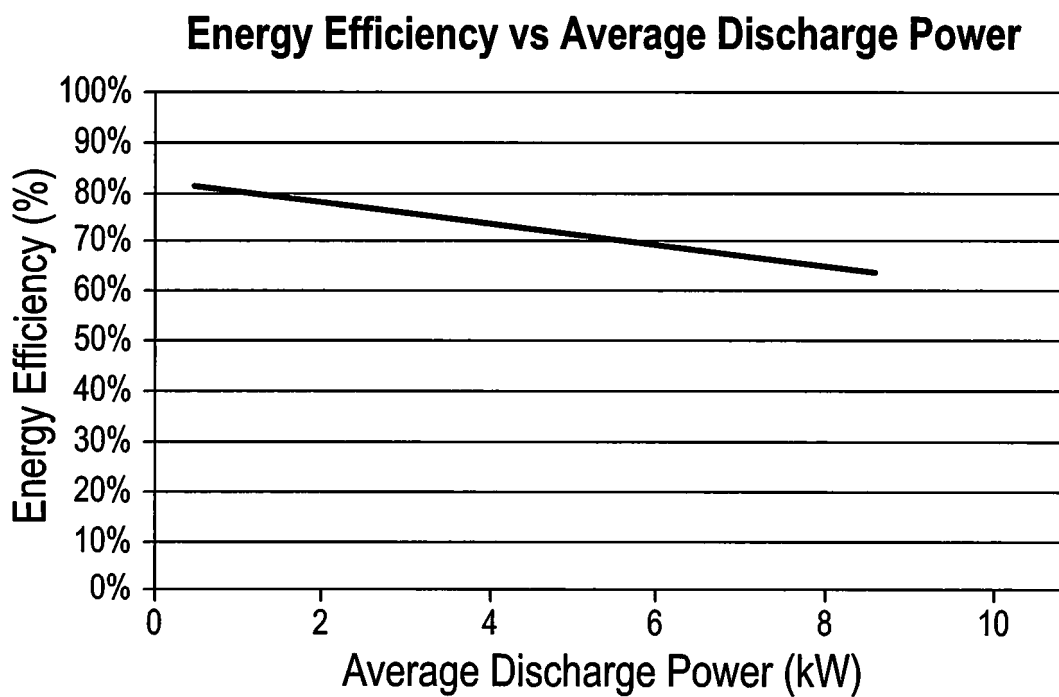


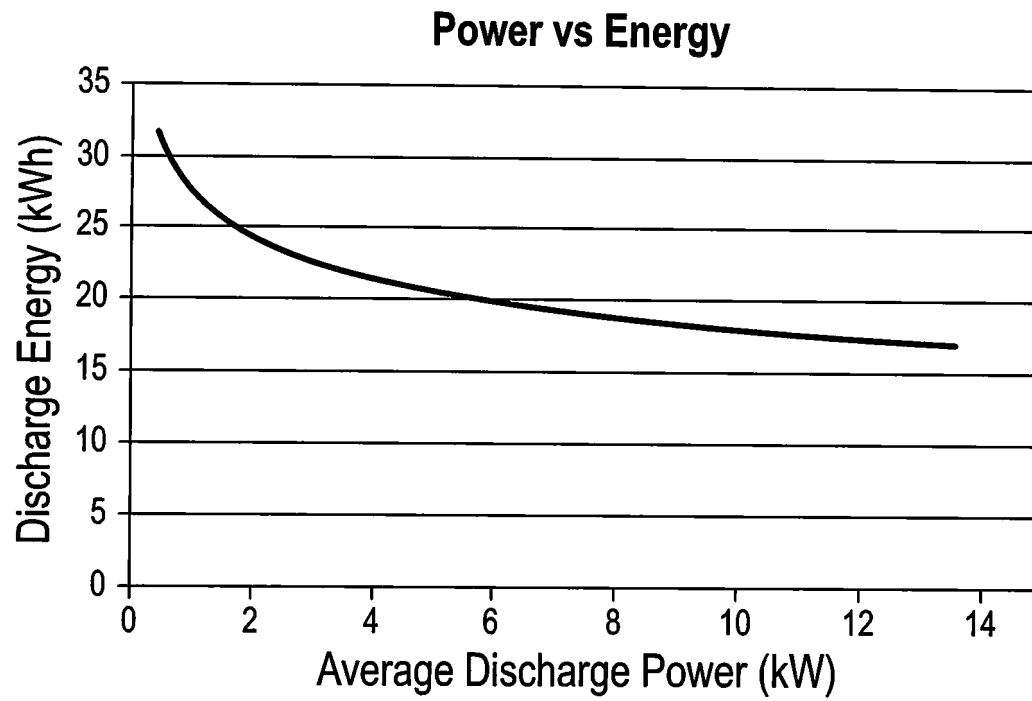
FIG. 24

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*FIG. 25A**FIG. 25B*

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*FIG. 26*

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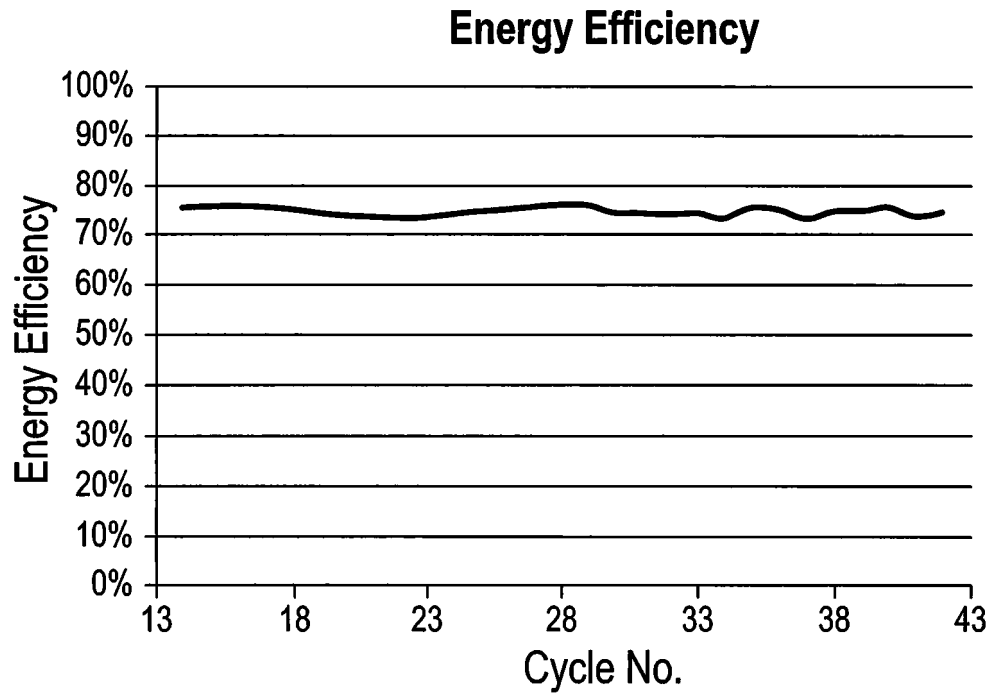


FIG. 27A

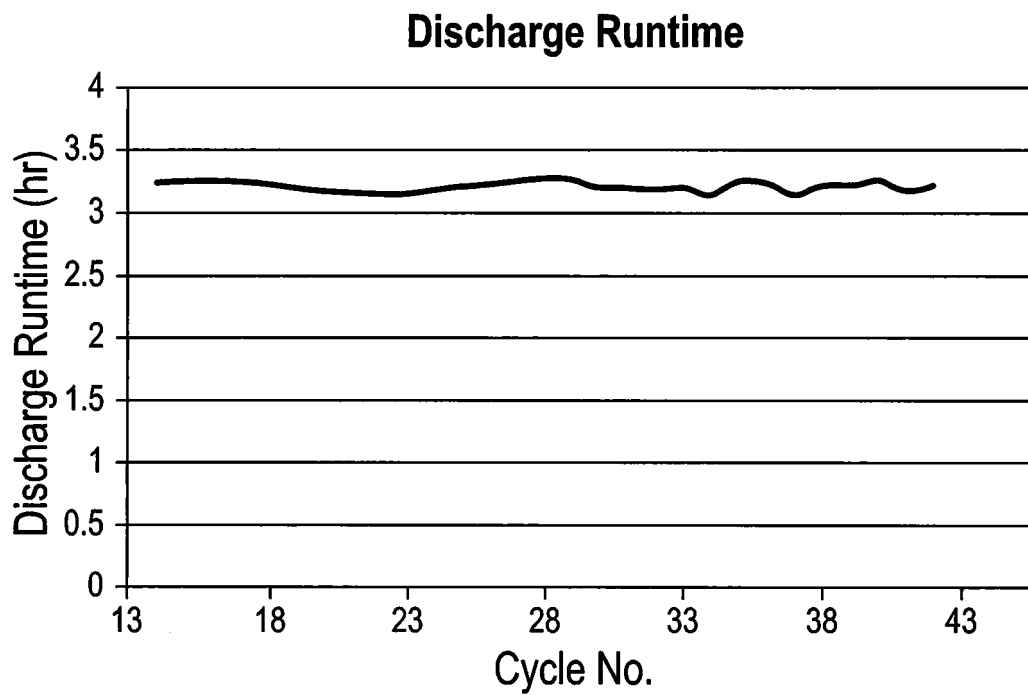


FIG. 27B

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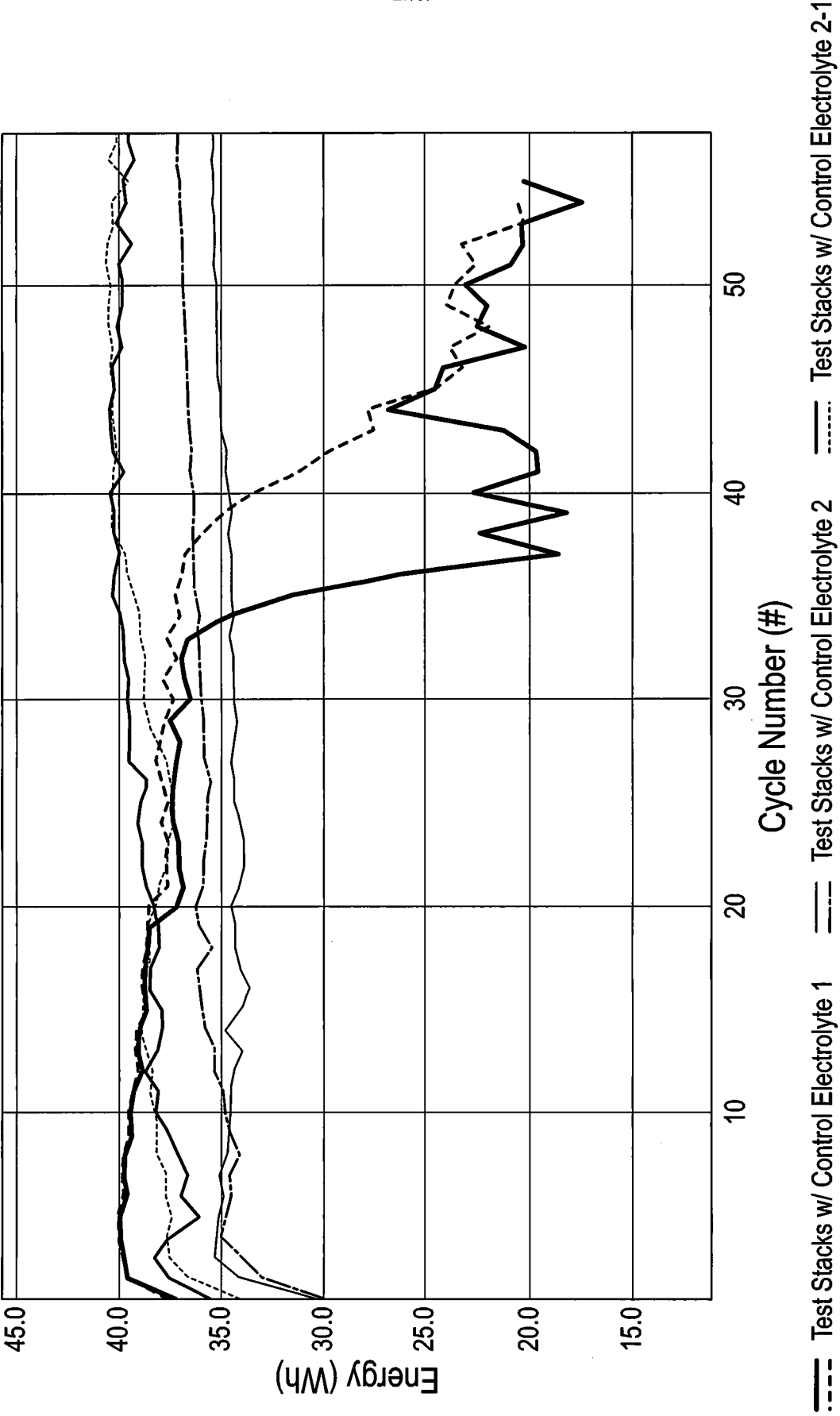
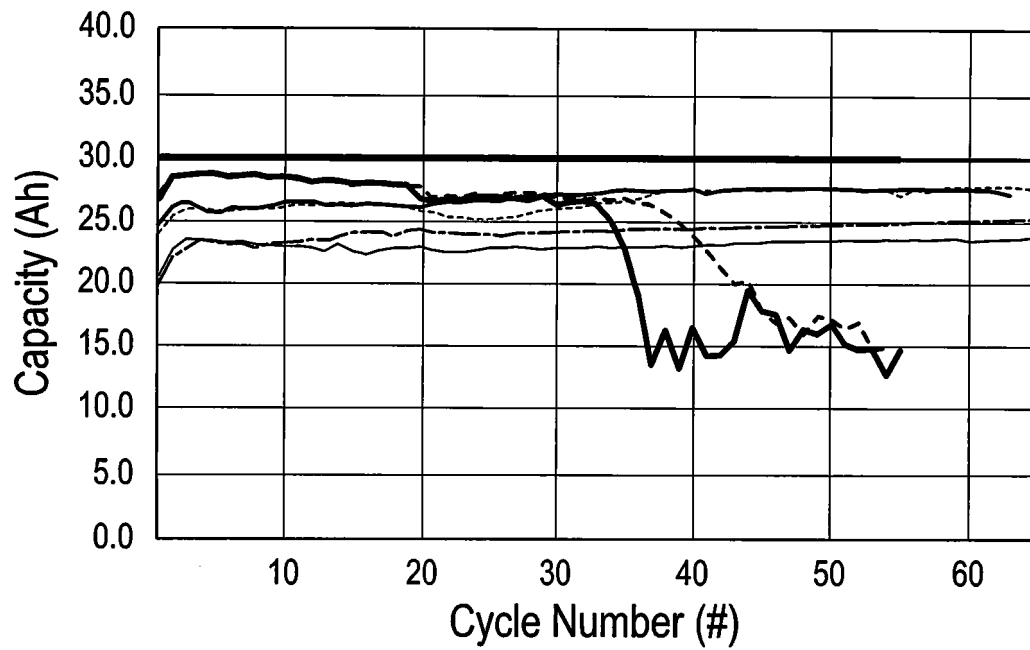


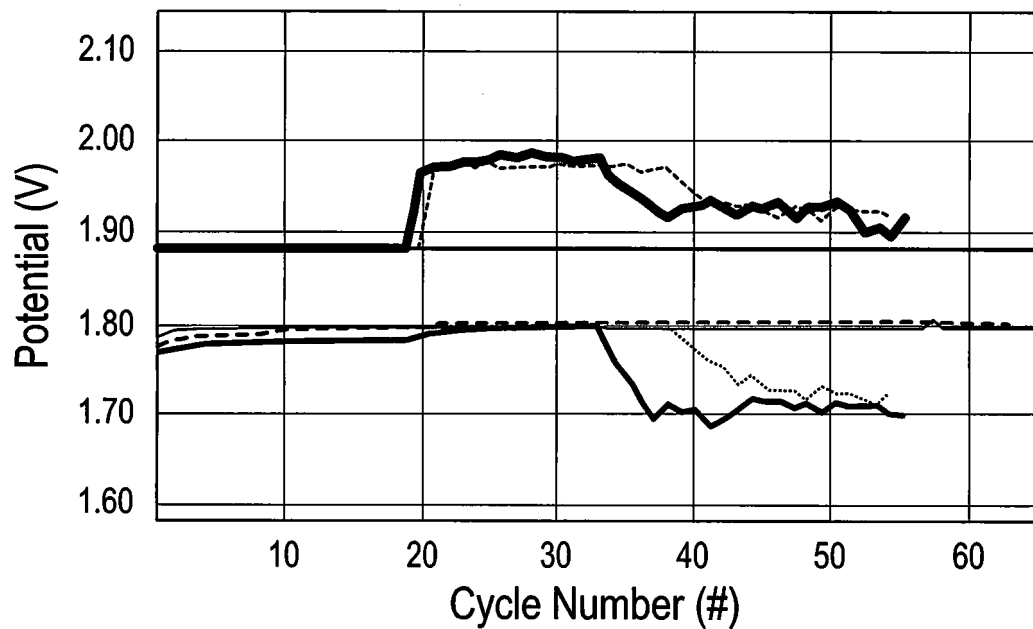
FIG. 28

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--- Test Stacks w/ Control Electrolyte 1 --- Test Stacks w/ Control Electrolyte 2
--- Test Stacks w/ Control Electrolyte 2-1

FIG. 29A

--- Test Stacks w/ Control Electrolyte 1 --- Test Stacks w/ Control Electrolyte 2
--- Test Stacks w/ Control Electrolyte 2-1

FIG. 29B

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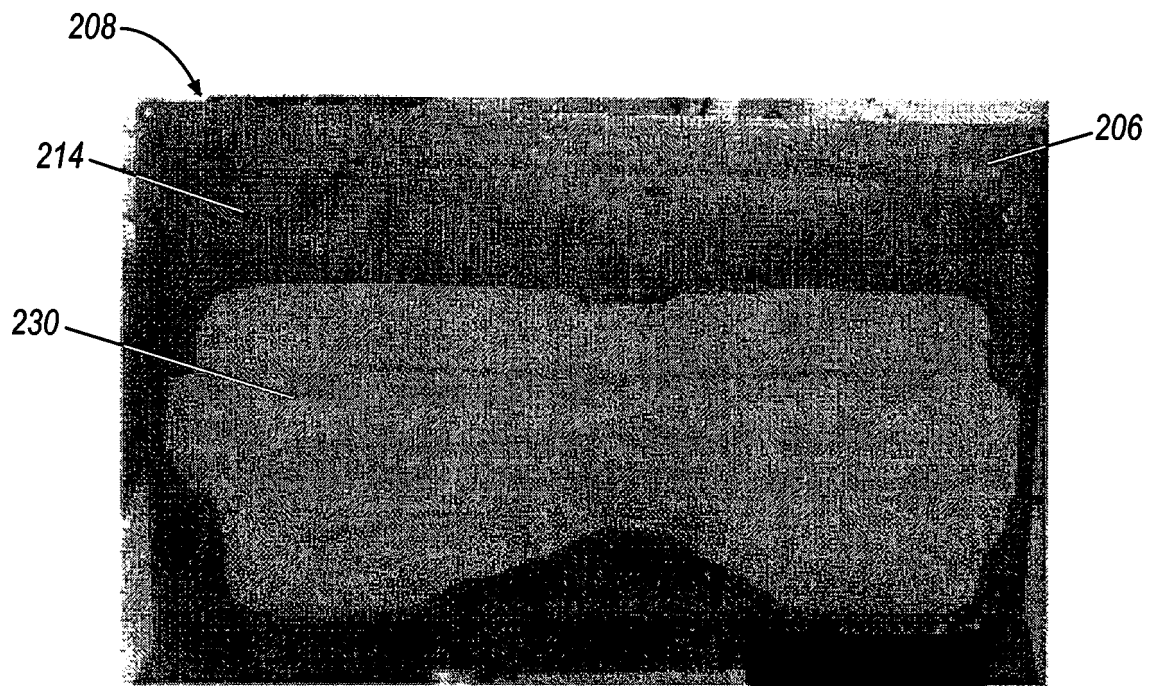


FIG. 30A

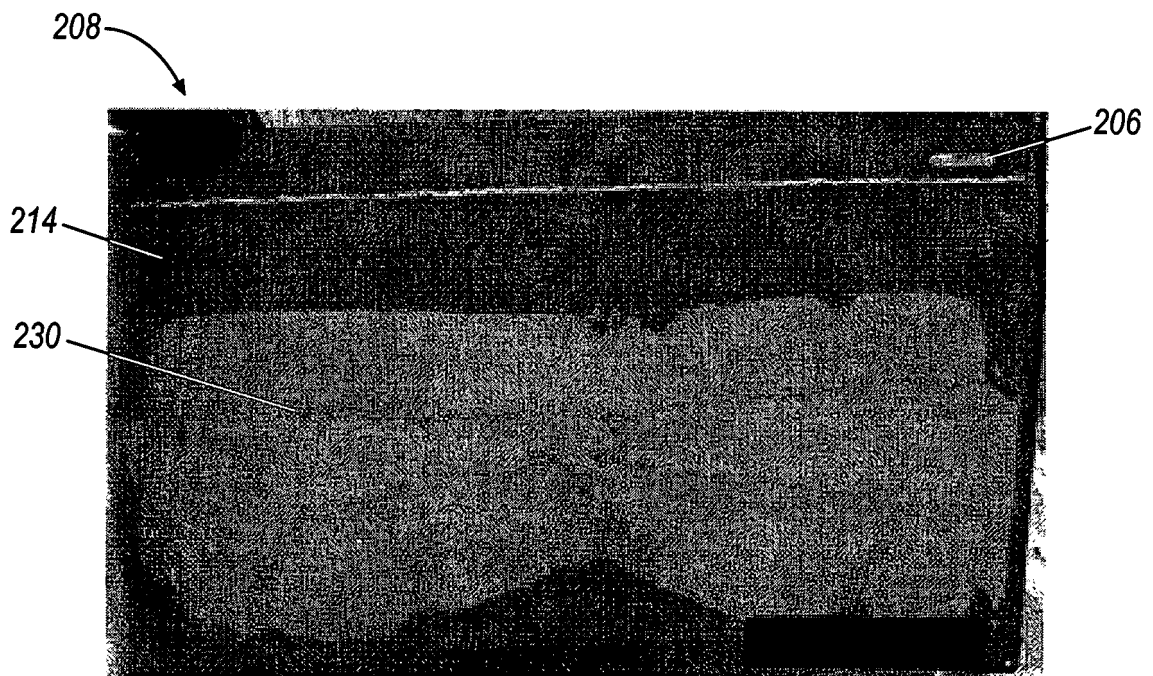


FIG. 30B

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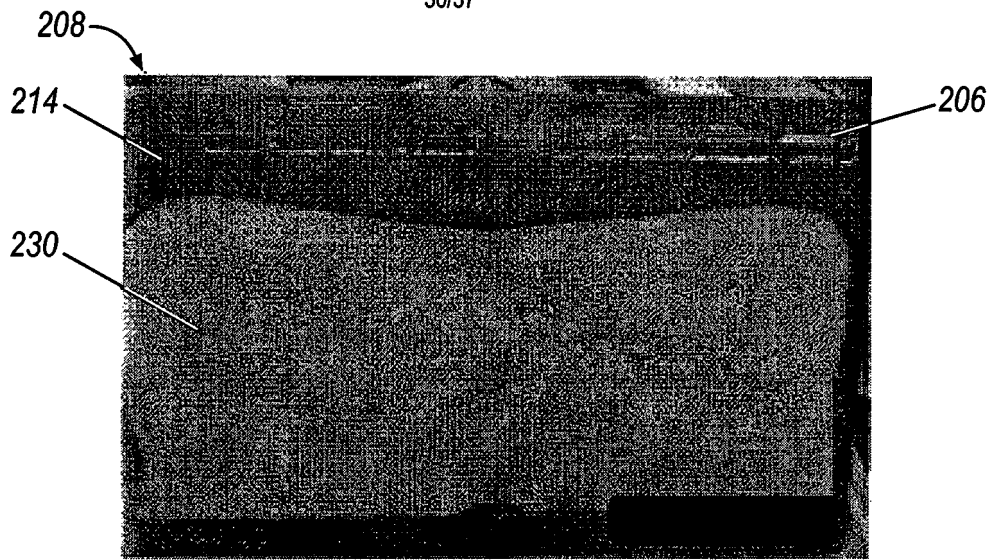


FIG. 31A

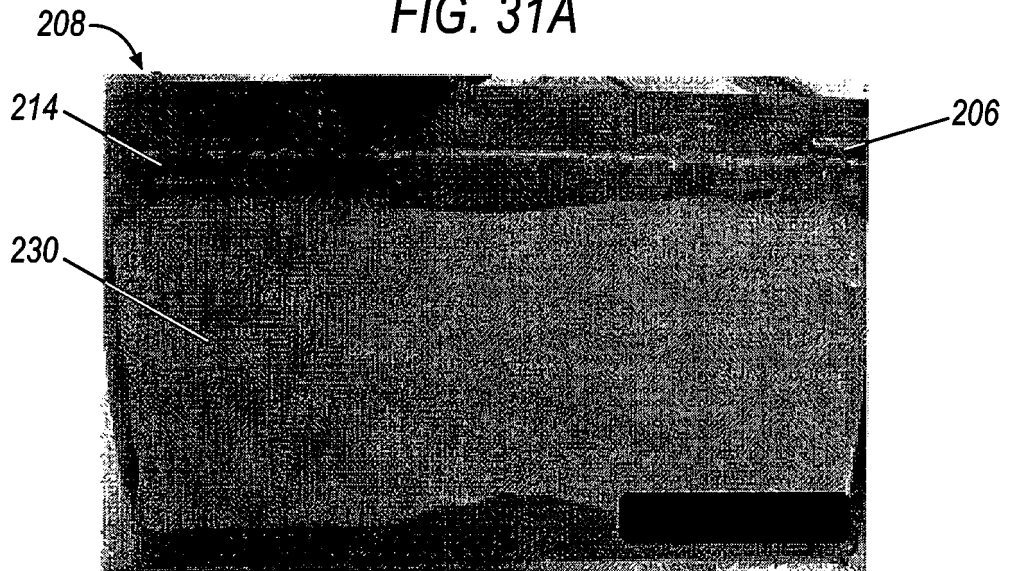


FIG. 31B

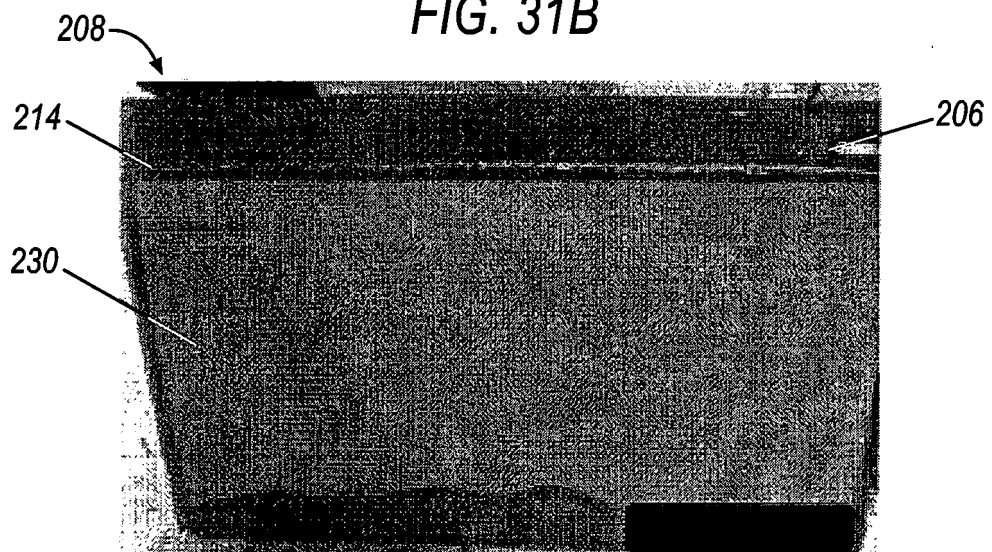
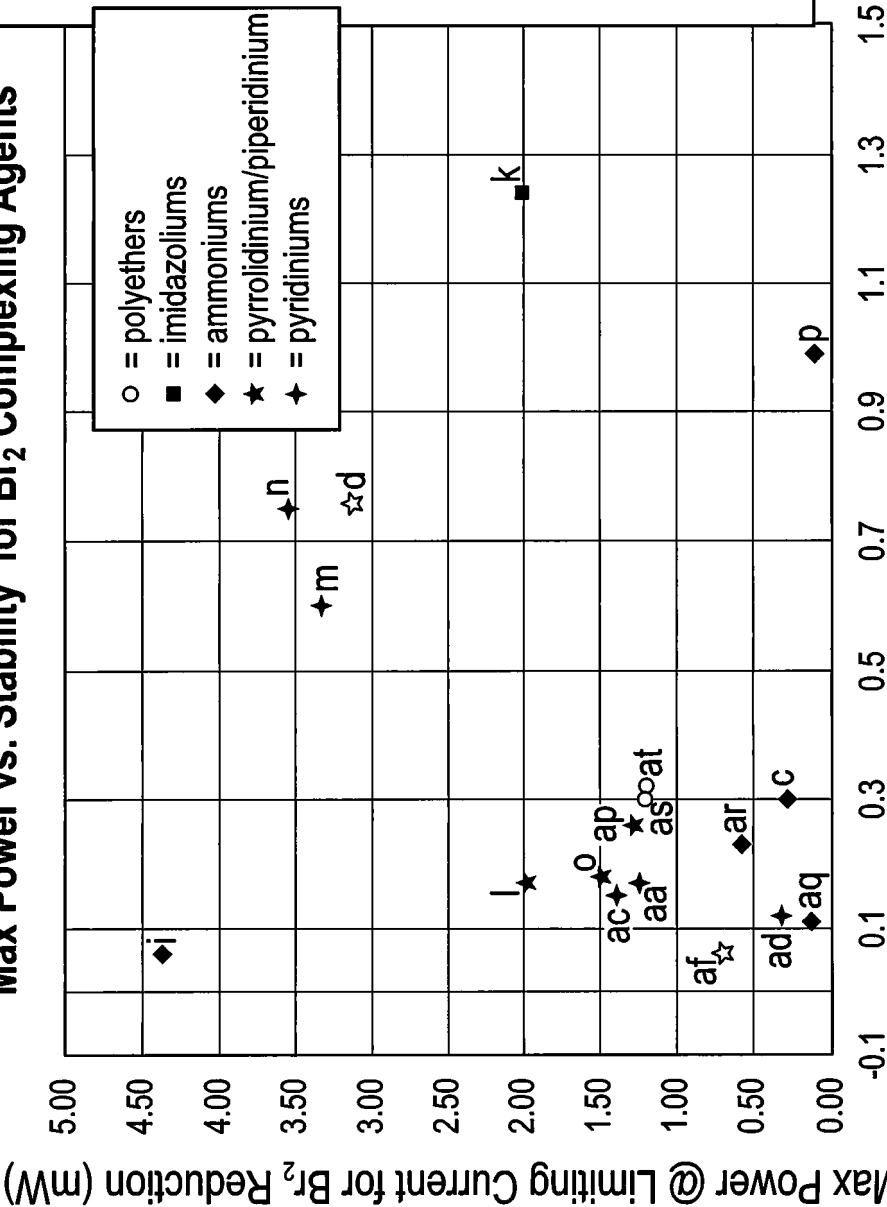


FIG. 31C

c	(TEA) tetraethylammonium bromide
d	(MEM)N-Ethyl-N-methylmorpholiniumbromide
i	trimethylpropylammonium bromide
j	1-ethyl-3-methylimidazolium bromide
k	1-butyl-3-methylimidazolium bromide
l	1-butyl-1-methylpyrrolidinium bromide
m	1-ethyl-3-methylpyridinium bromide
n	1-ethyl-2-methylpyridinium bromide
o	1-methyl-1-propylpiperidinium bromide
p	dodecyltrimethylammonium bromide
v	1-ethyl-2,3-dimethylimidazolium bromide
w	1-decyl-3-methylimidazolium bromide
x	1-butyl-2,3-dimethylimidazolium bromide
y	1-methyl-3-octylimidazolium bromide
z	1-methyl-3-hexylimidazolium bromide
aa	1-butyl-3-methylpyridinium bromide
ac	1-butyl-4-methylpyridinium bromide
ad	1-hexylpyridinium bromide
af	tetraethylphosphonium bromide
ap	1-methyl-1-propylpyrrolidinium bromide
aq	hexyltrimethylammonium bromide
ar	CTAB
as	18-crown-6
at	15-Crown-5
au	DME-PEG 2000K

Max Power vs. Stability for Br₂ Complexing Agents



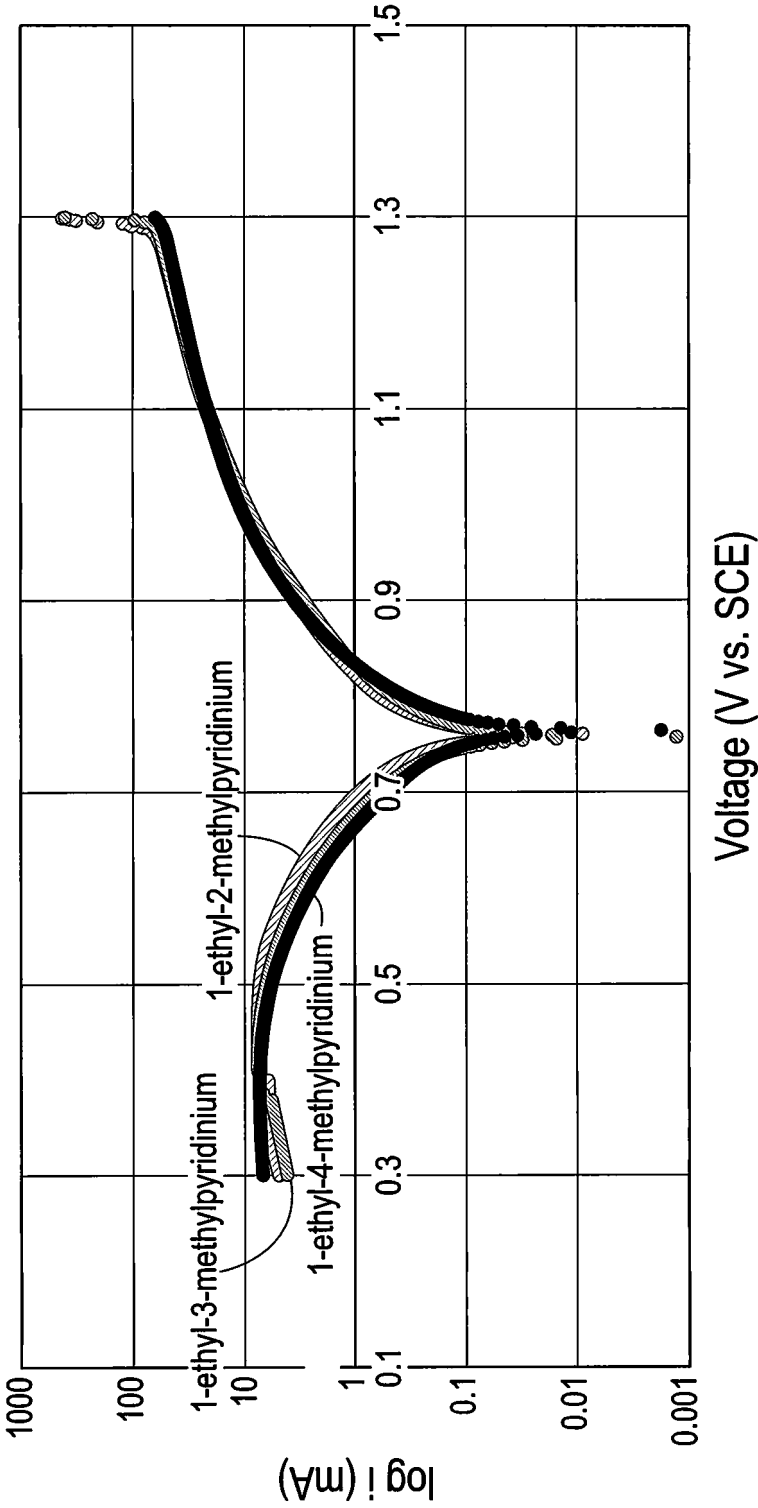
Change in pH @60C after 7 Days

FIG. 32

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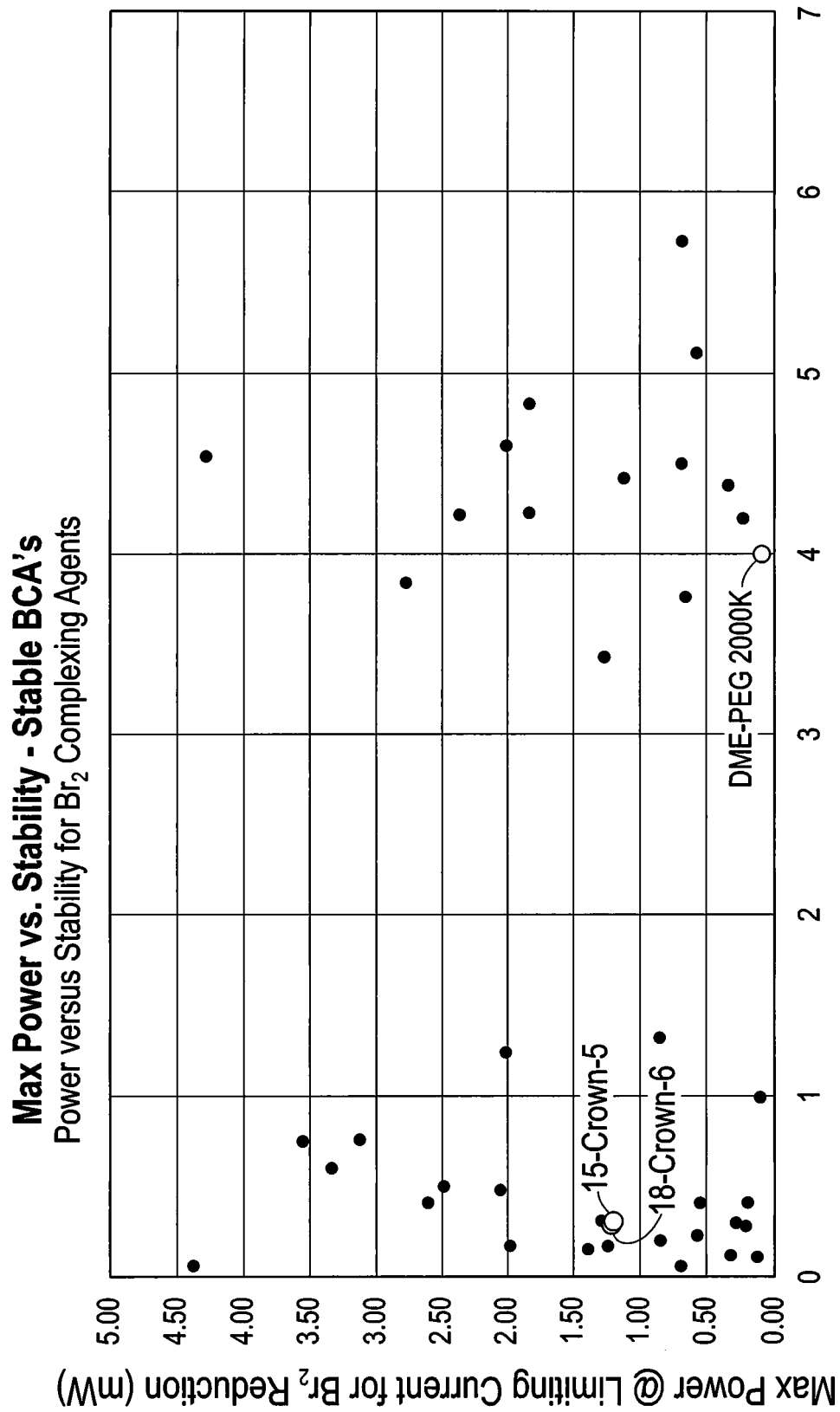
Comparison of Br₂ Activity of Ethyl Methyl Pyridiniums
Tafel Plots of Ethyl Methyl Pyridiniums



Max Power at Limiting Current similar for each:
● 1-ethyl-2-methylpyridinium Br=3.43 mW
● 1-ethyl-3-methylpyridinium Br=3.28 mW
● 1-ethyl-4-methylpyridinium Br=3.03 mW

FIG. 33

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Change in pH @60C after 7 Days

FIG. 34

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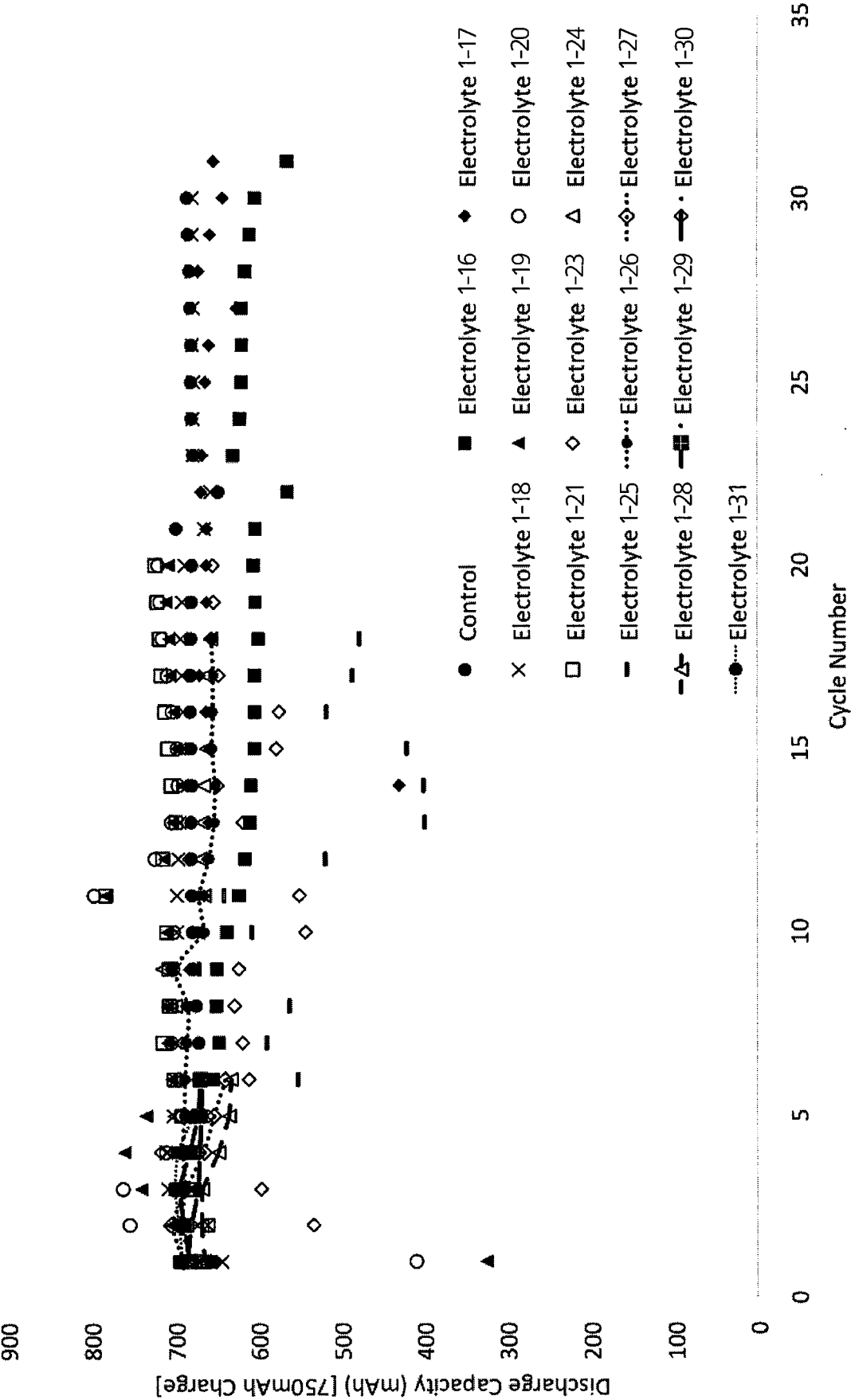


FIG. 35

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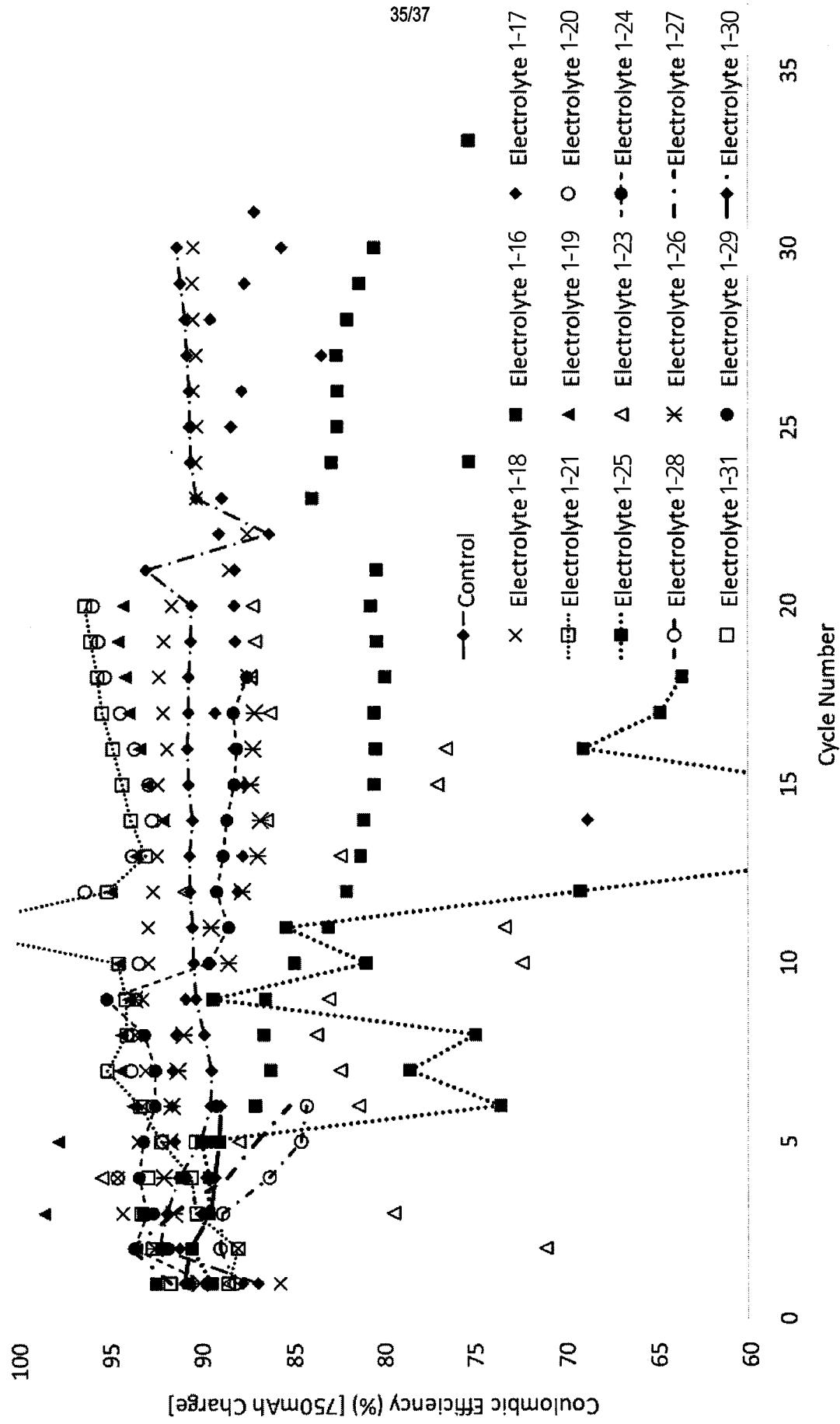


FIG. 36

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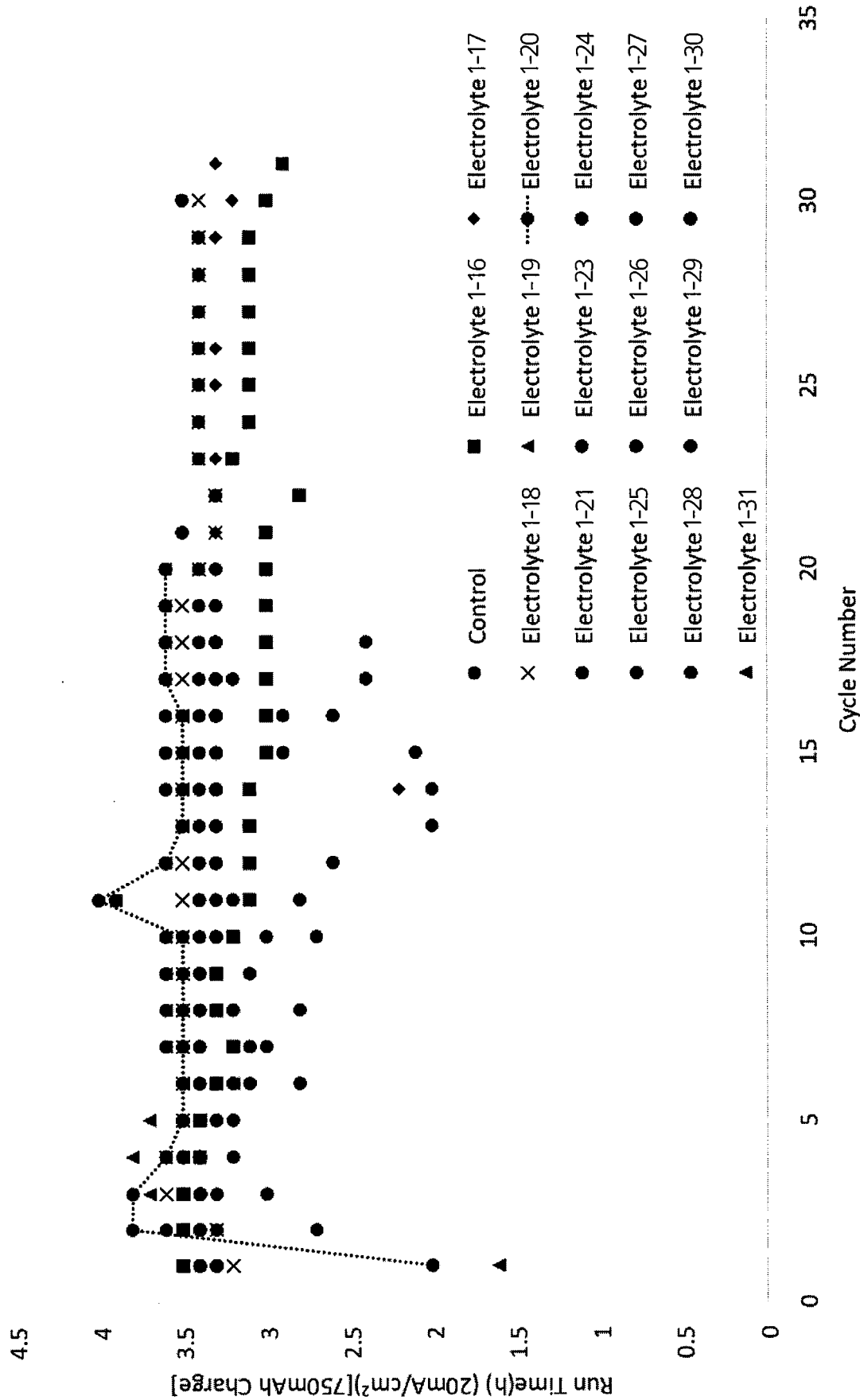


FIG. 37

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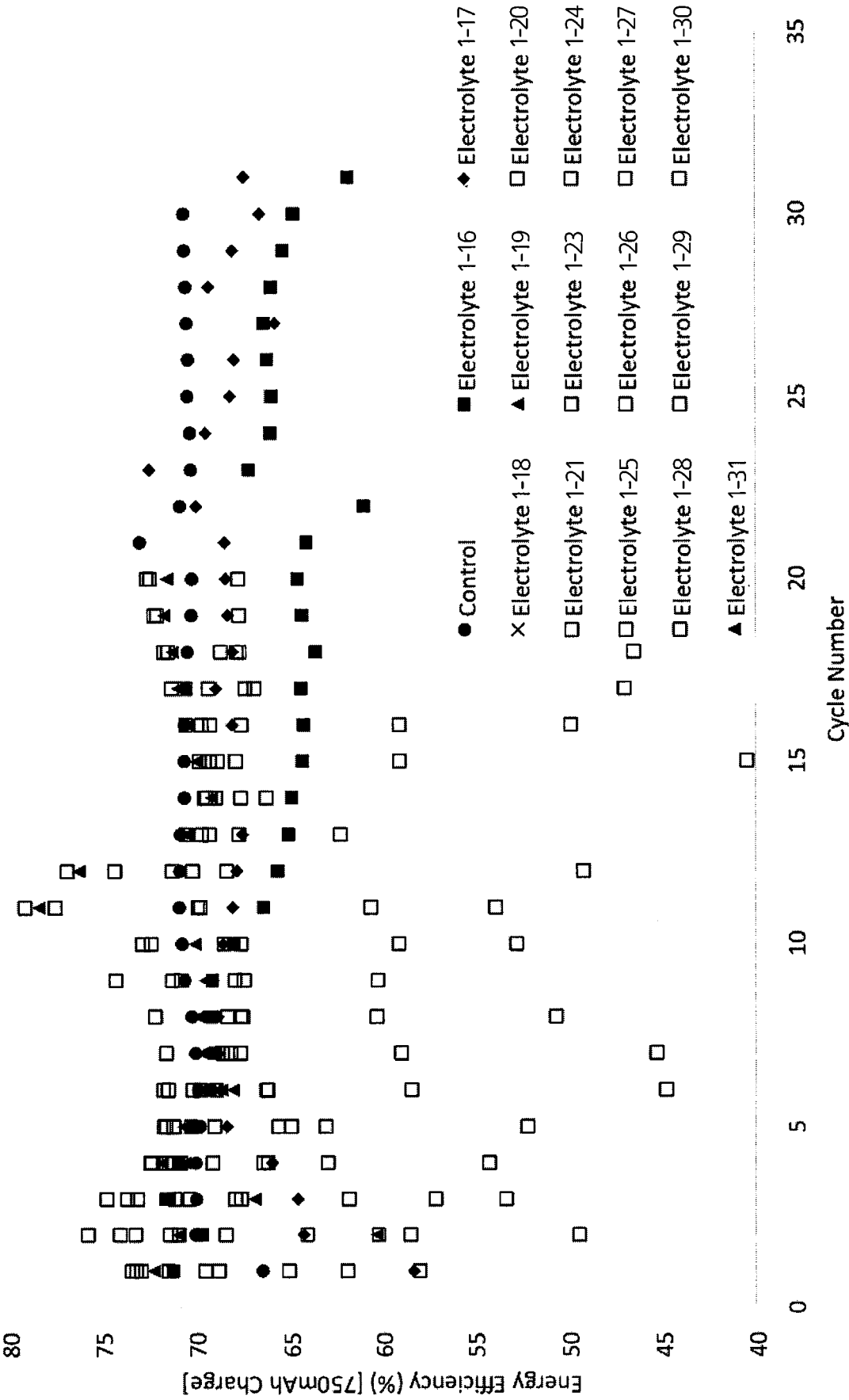


FIG. 38

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