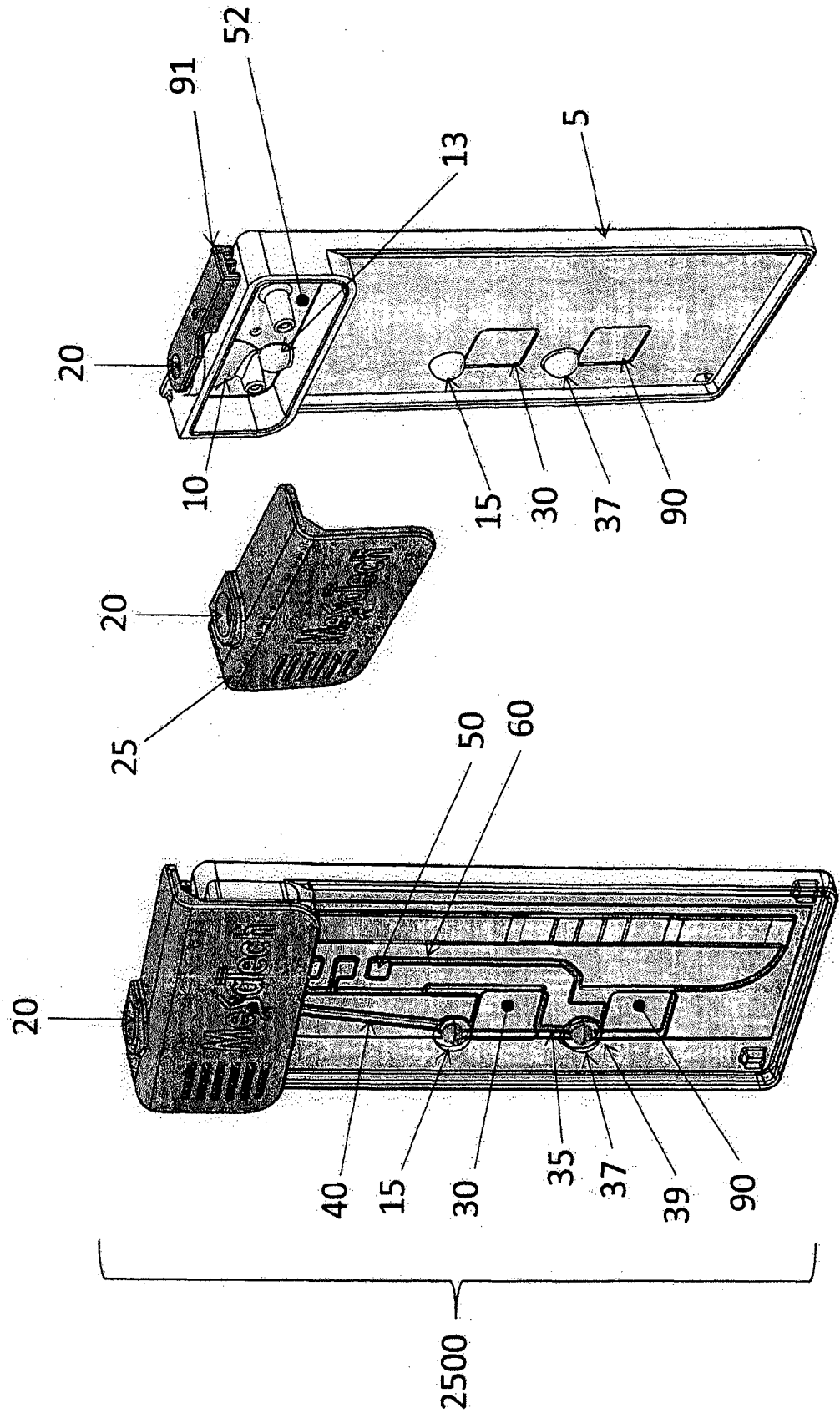


FIG. 1B



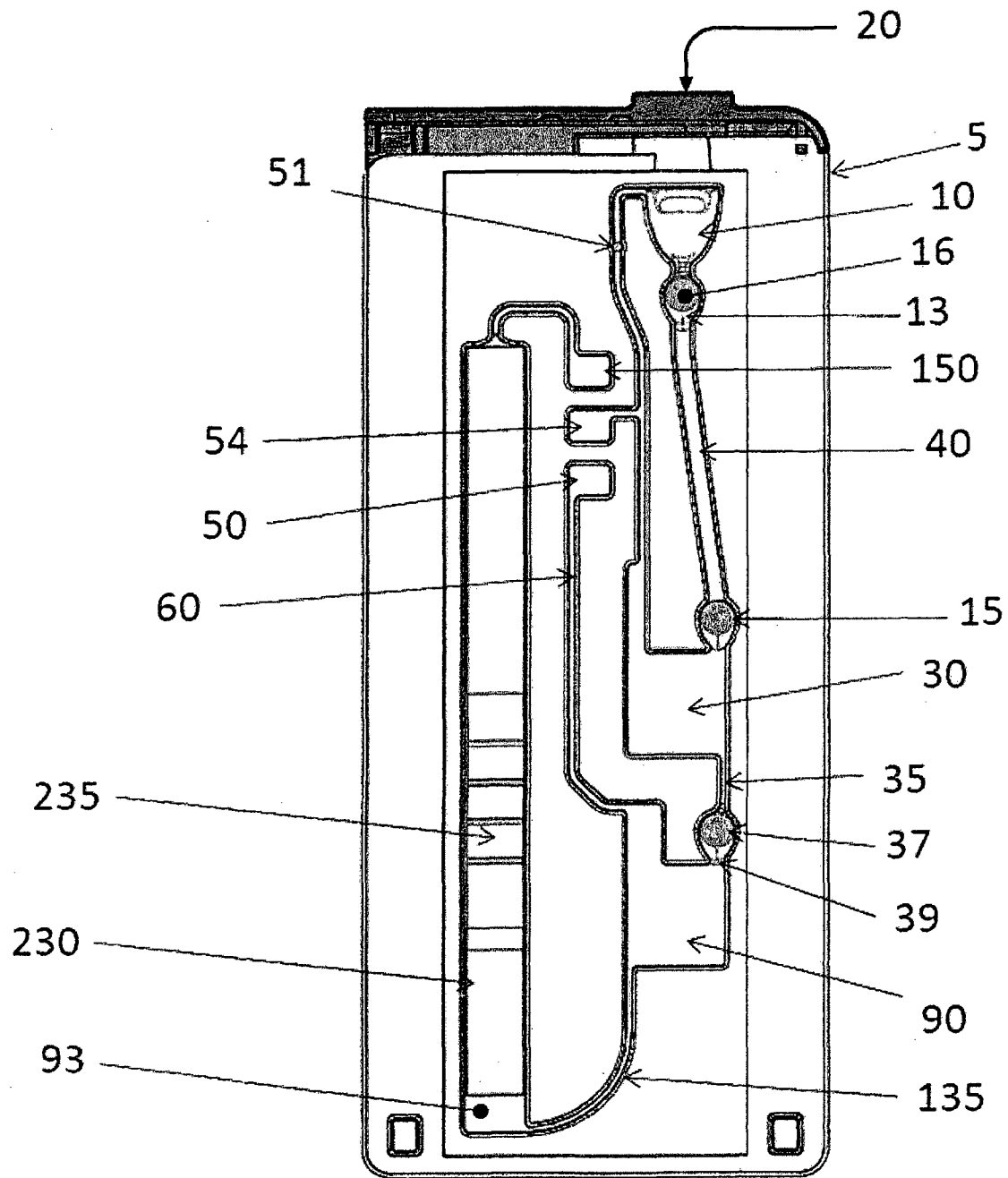


FIG. 2A

FIG. 2B

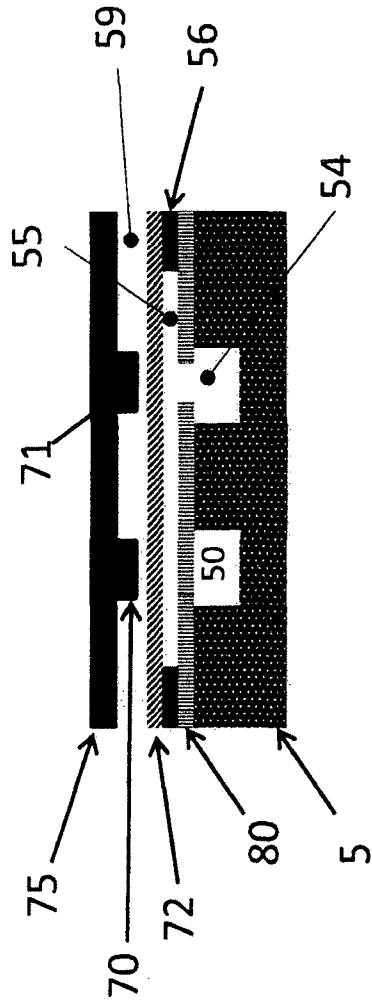
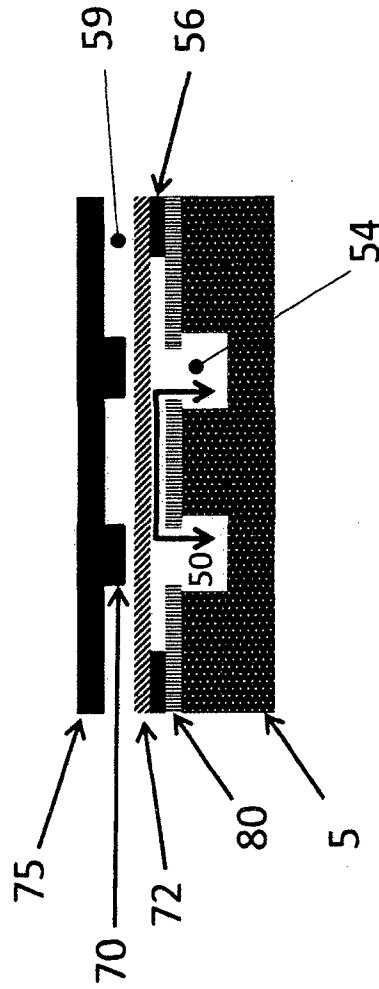


FIG. 2C



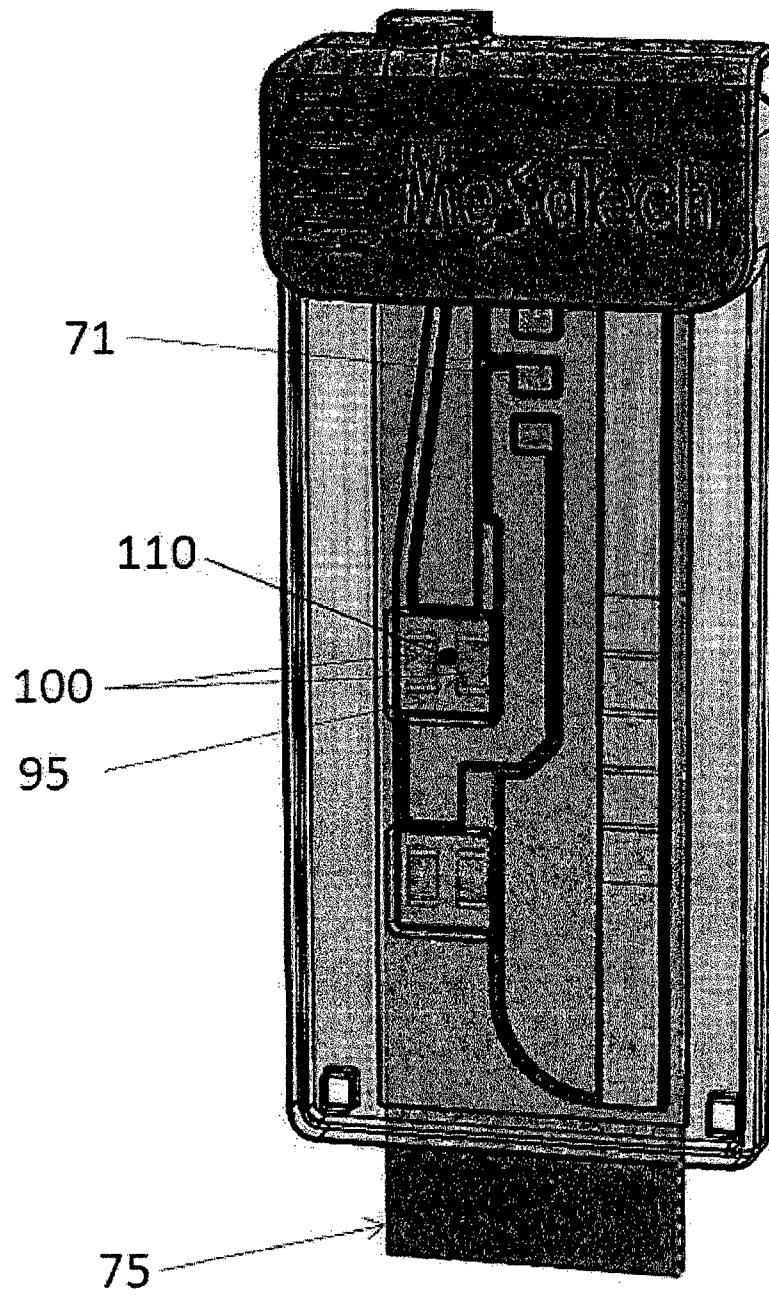


FIG. 2D

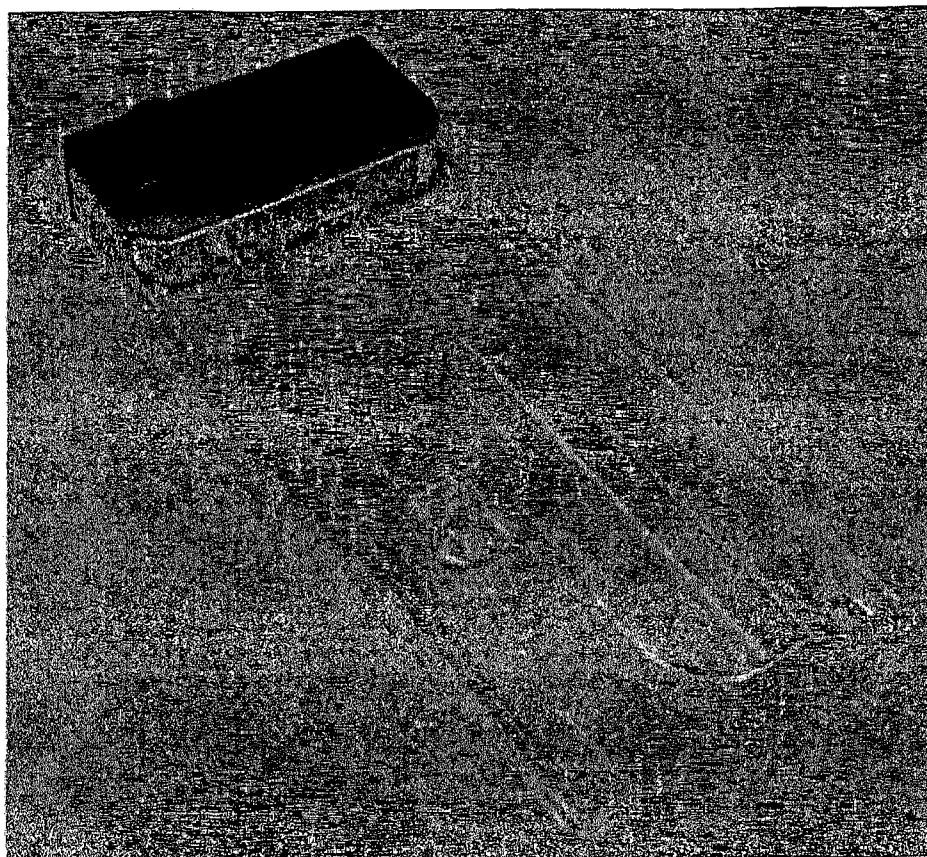


FIG. 2E

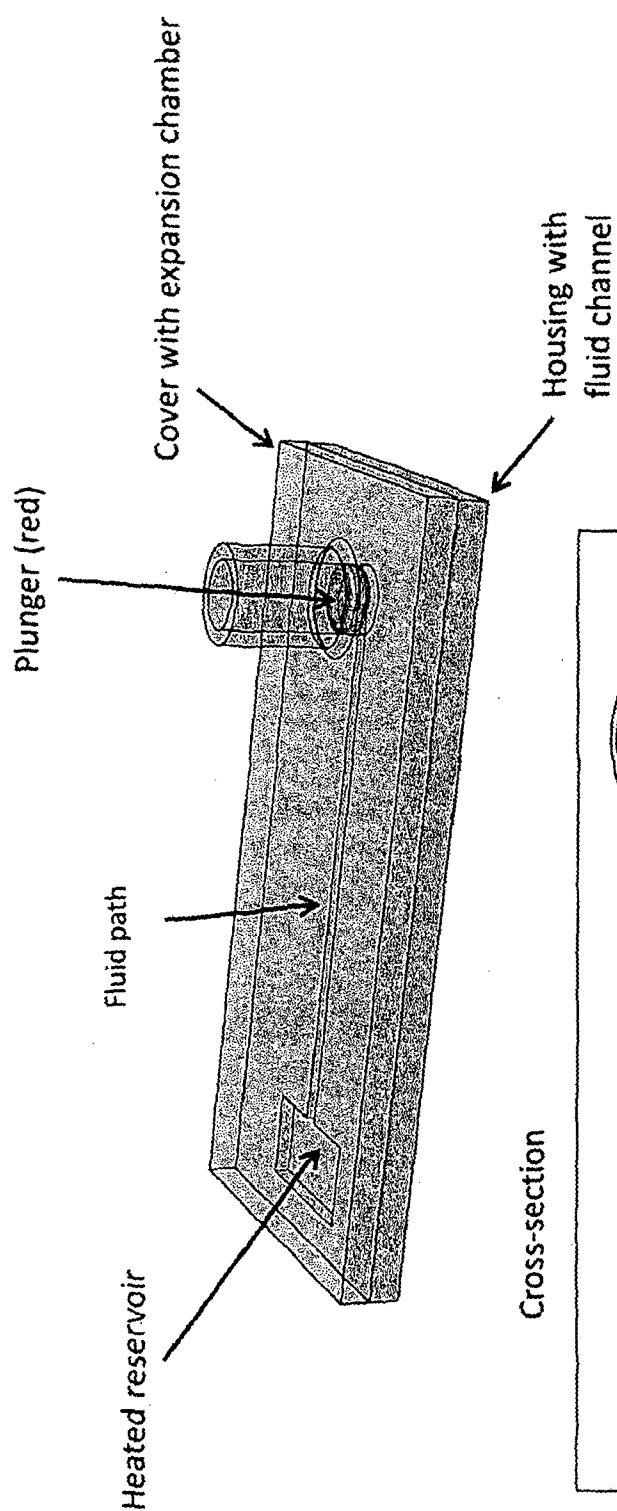


FIG. 3A

Cross-section

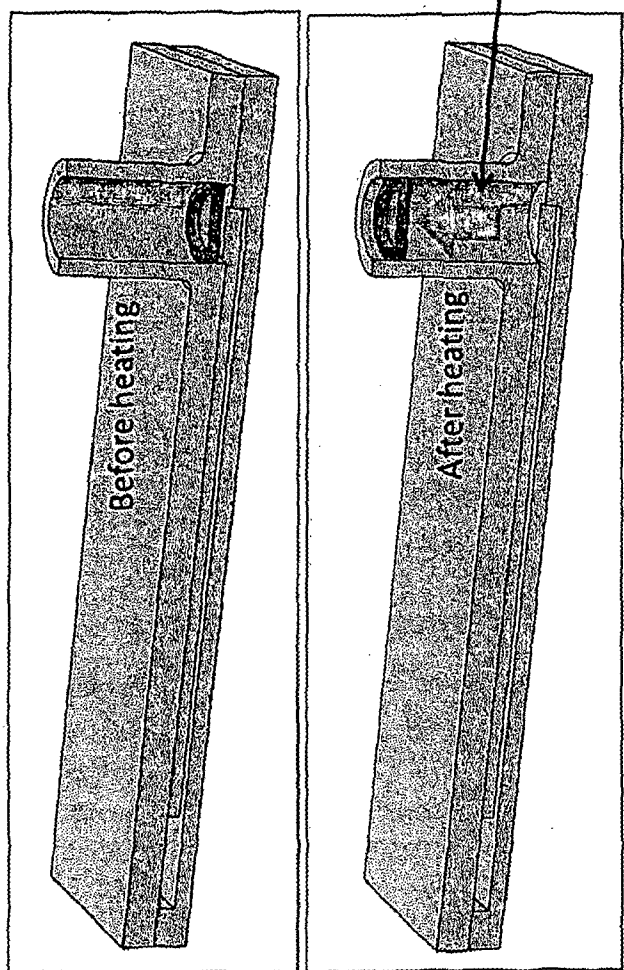
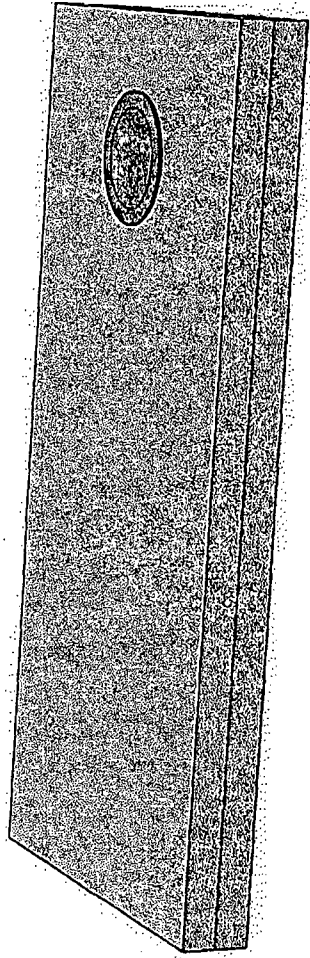


FIG. 3B

FIG. 3C

FIG. 4A



Flexible bladder

Cross-section

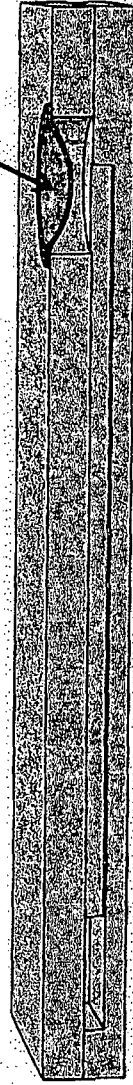


FIG. 4I

Cross-section



Volume expansion deflects bladder

FIG. 4C

FIG. 5A

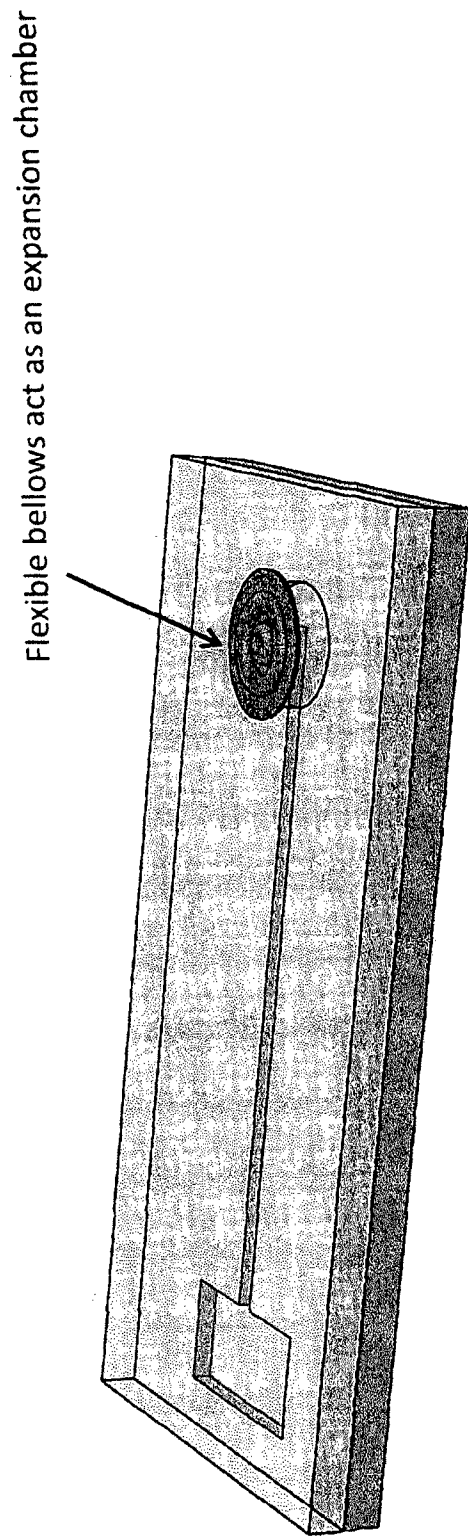
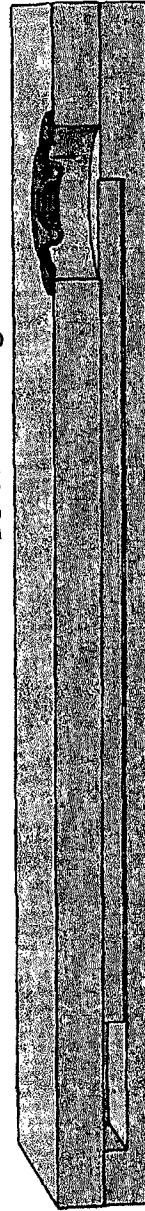


FIG. 5B

Cross-section

Before heating



After heating

Stretched bellows

Cross-section



FIG. 5C

Hydrophobic membrane

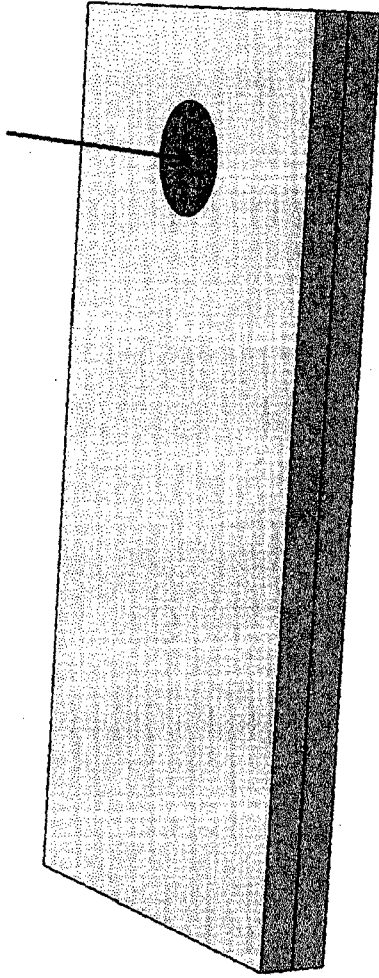
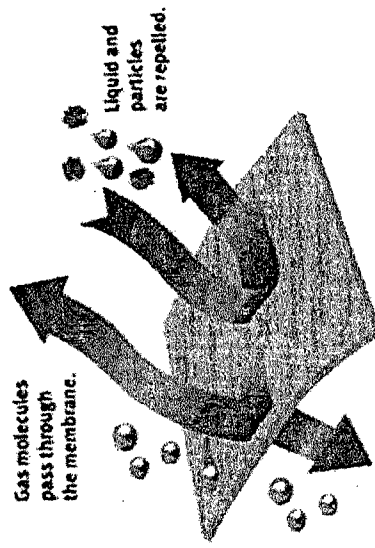
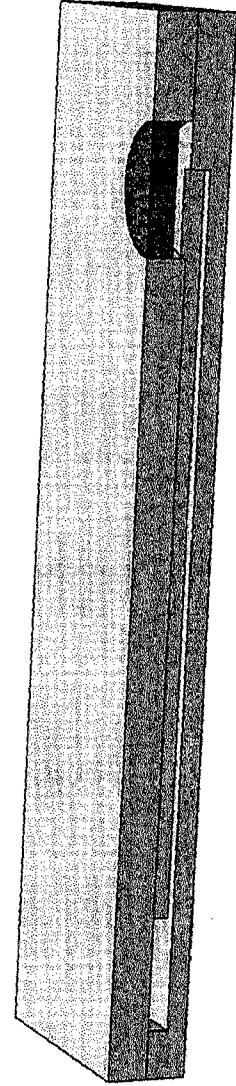


FIG. 6A



Gas molecules
pass through
the membrane.

Liquid and
particles
are repelled.



Cross-section

FIG. 6B

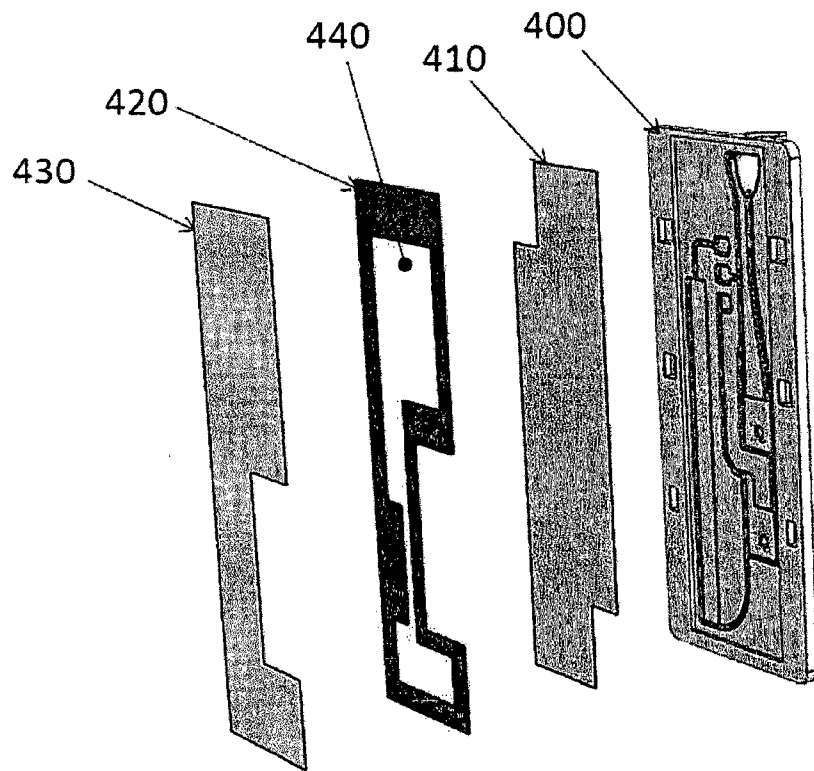


FIG. 7

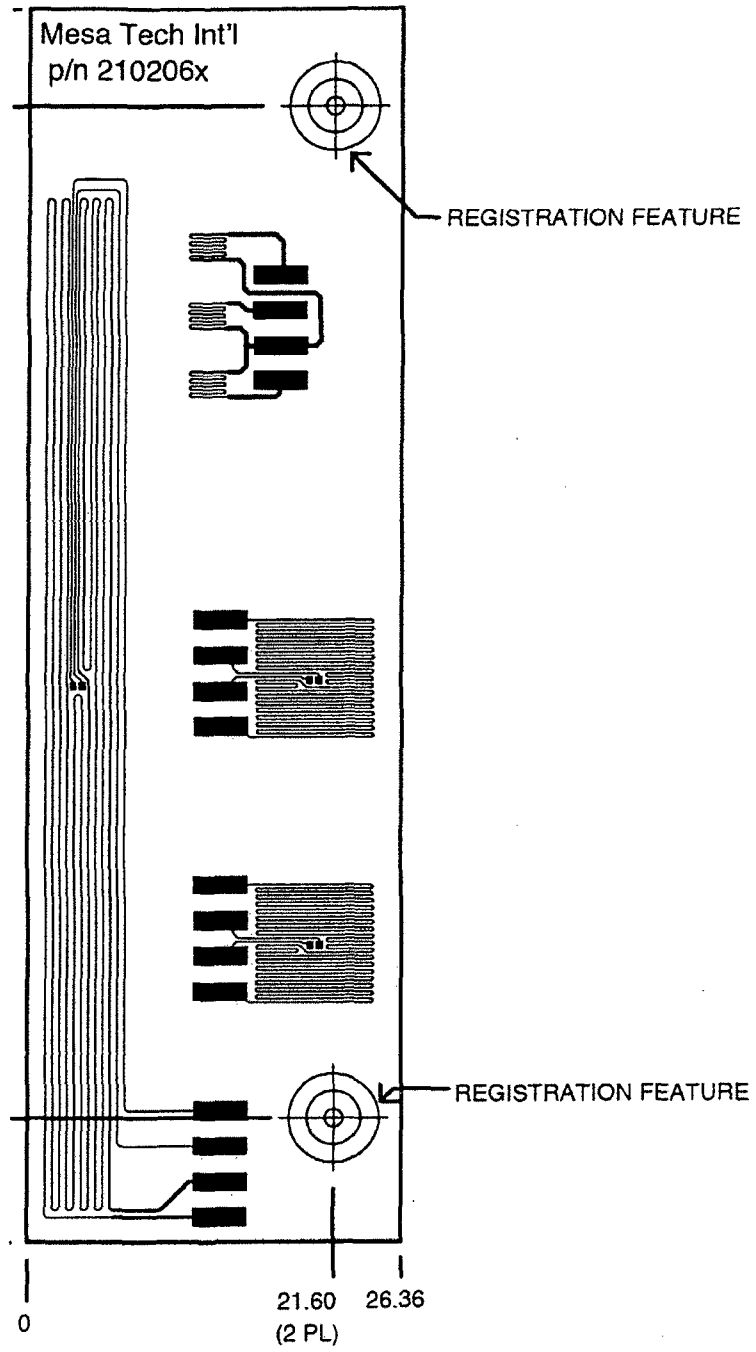


FIG. 8A

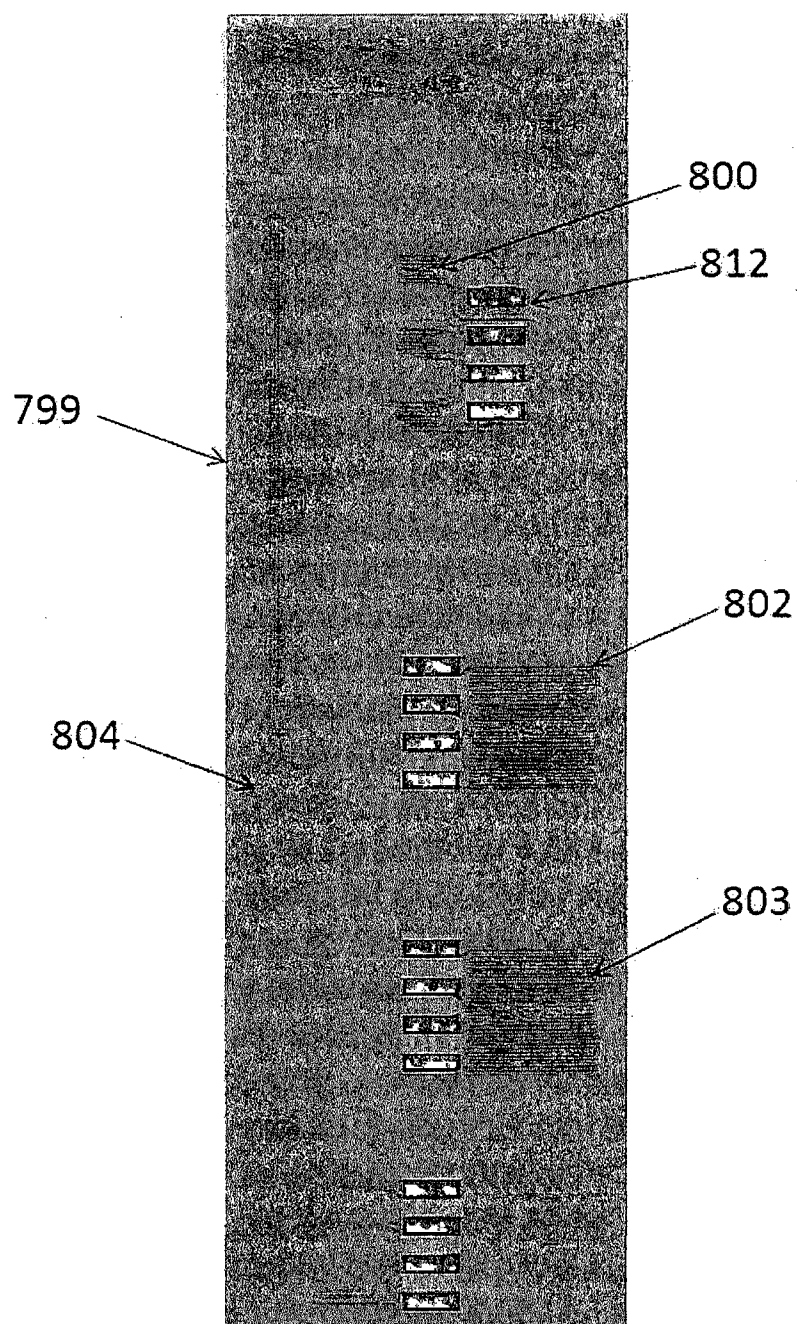


FIG. 8B

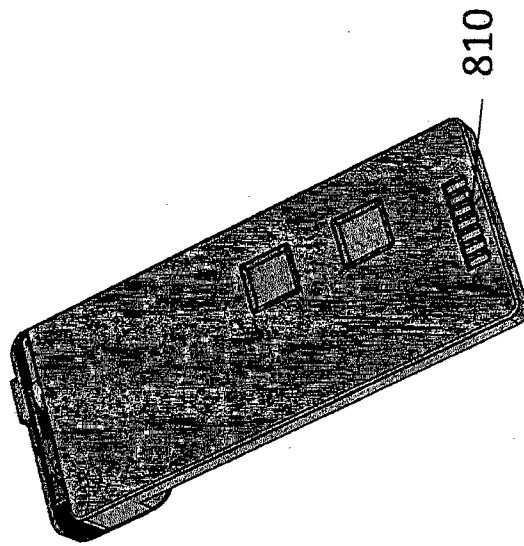


FIG. 8D

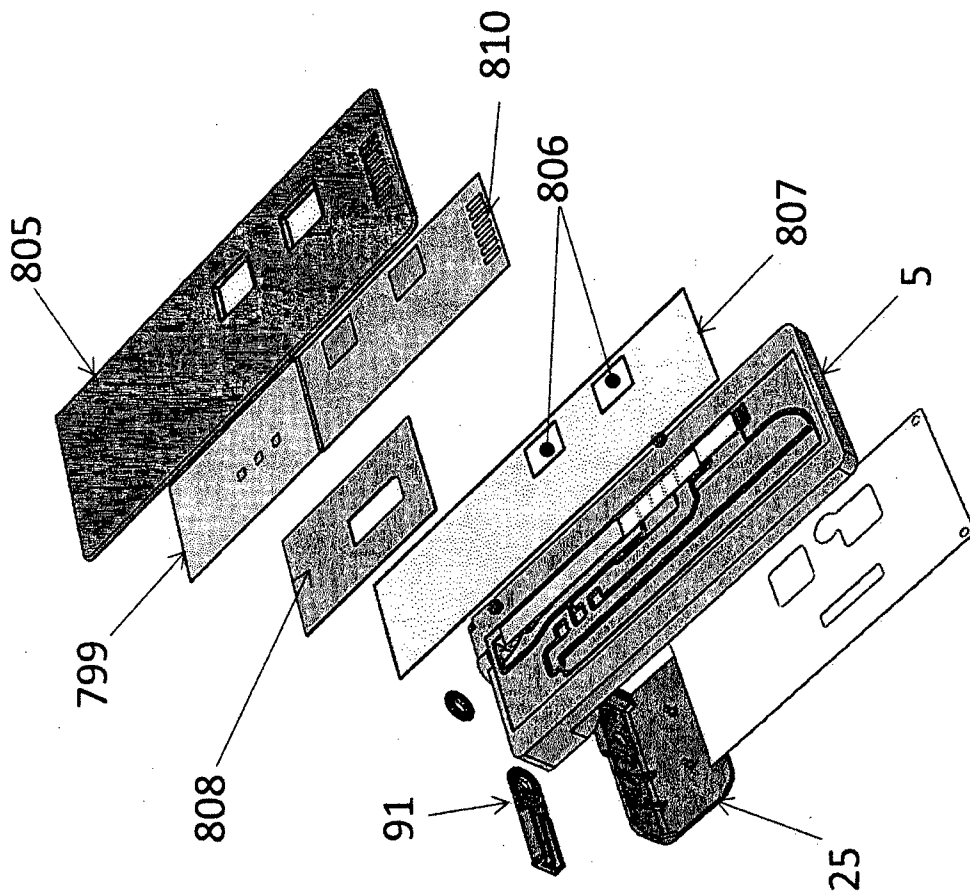


FIG. 8C

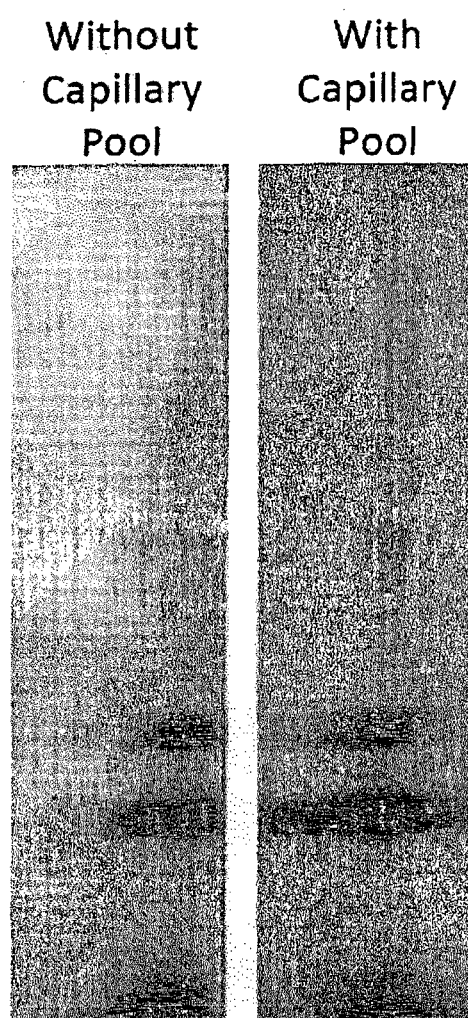
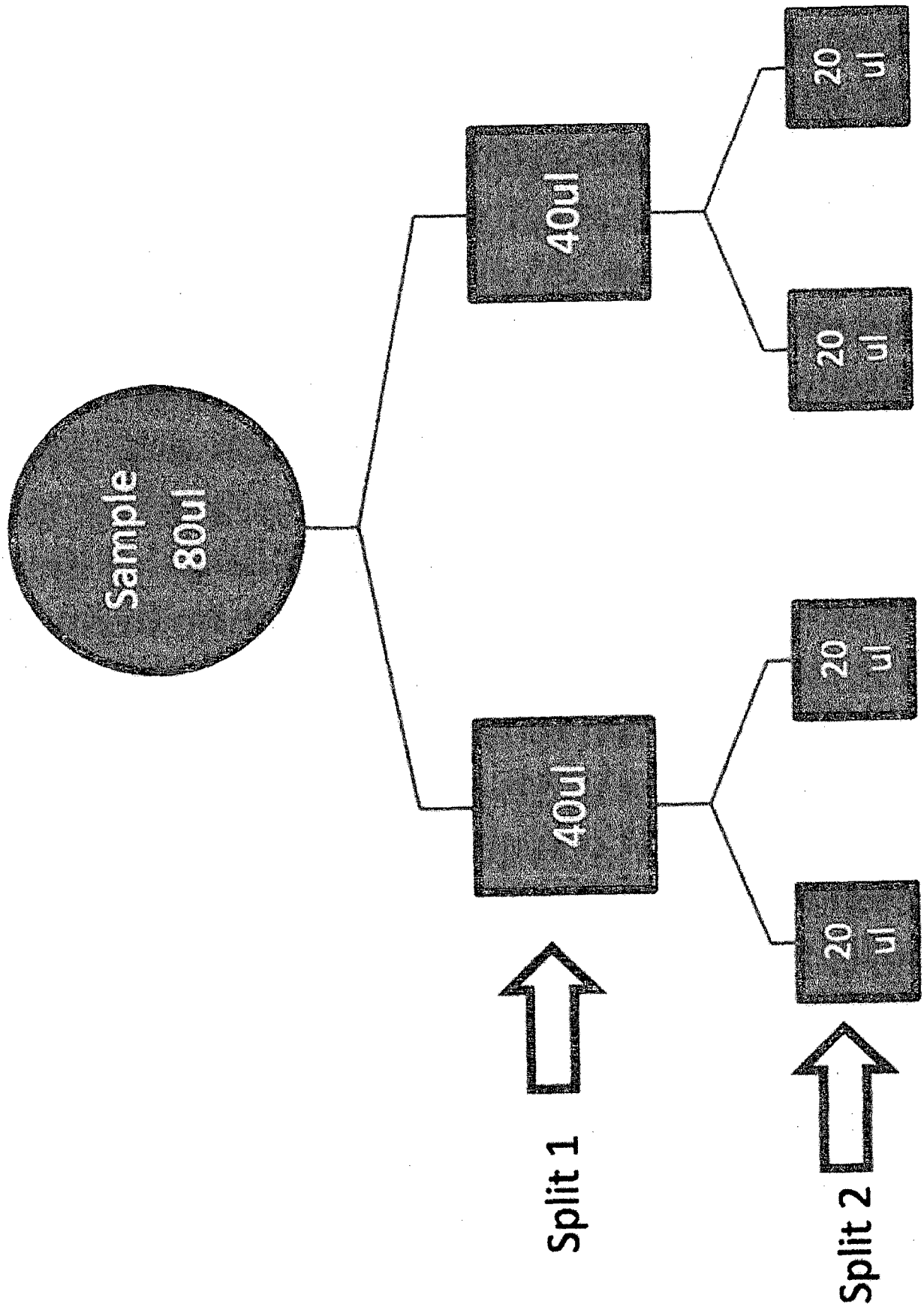


FIG. 9

FIG. 10



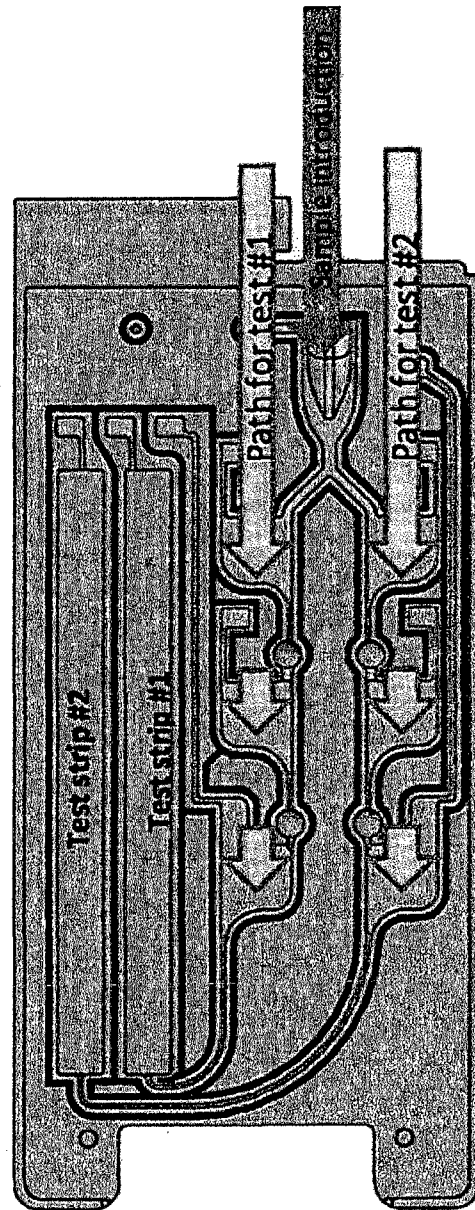


FIG. 11

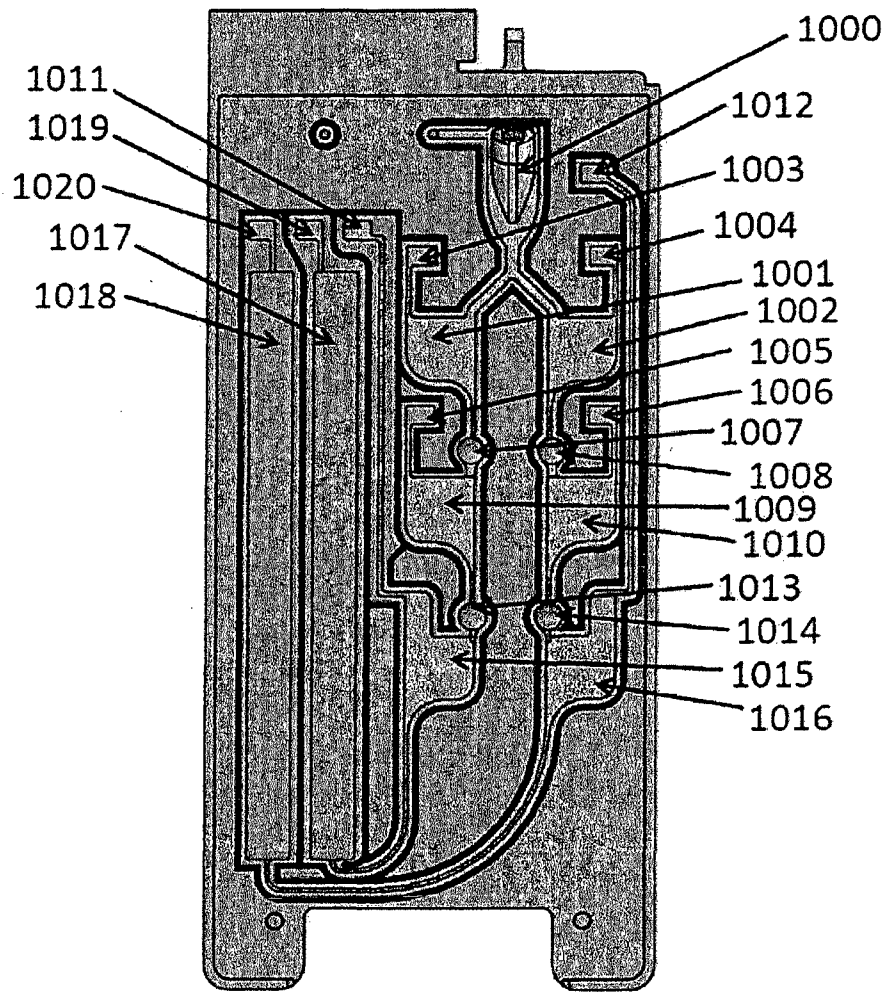


FIG. 12

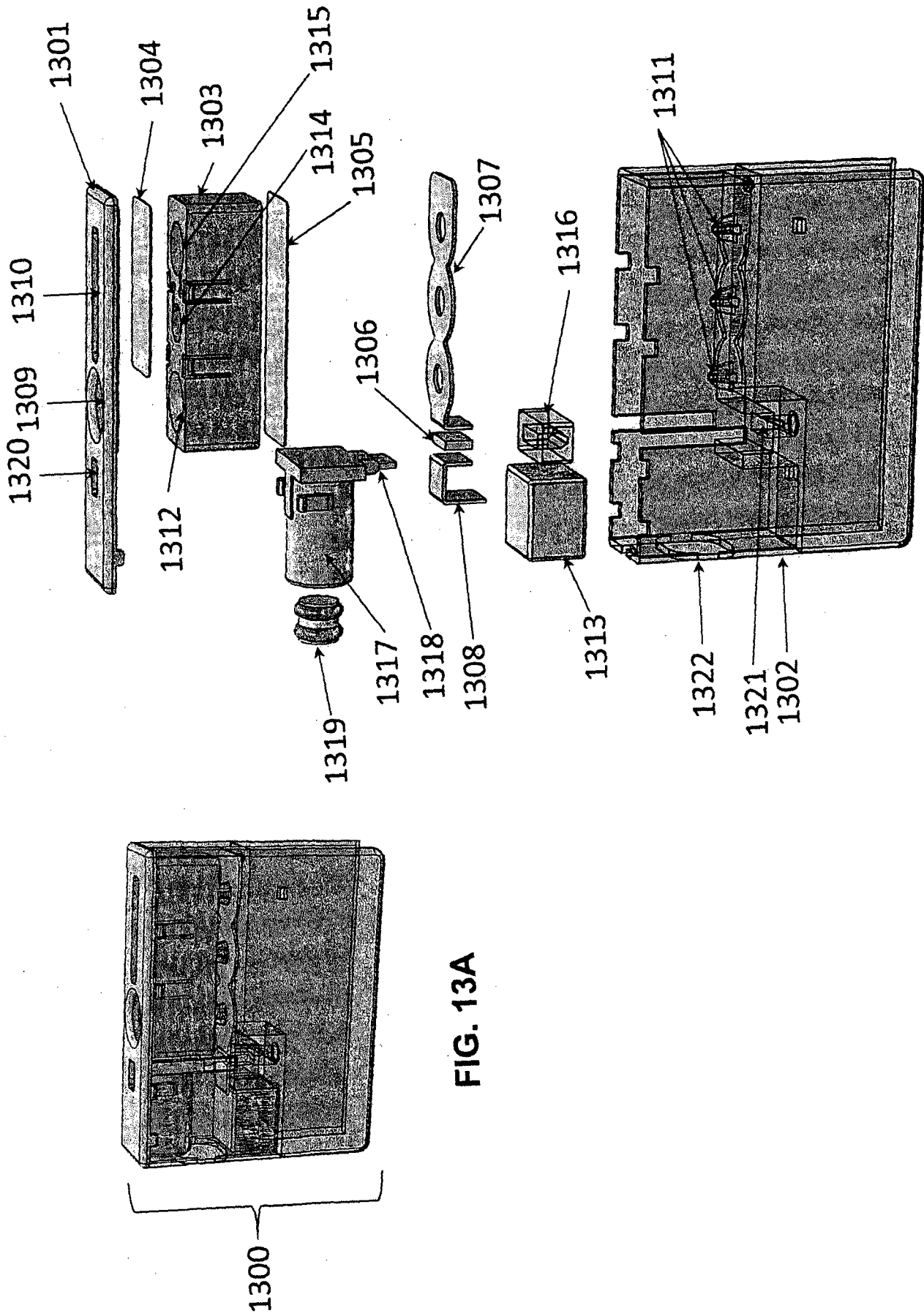


FIG. 14

Before sample processing After sample processing

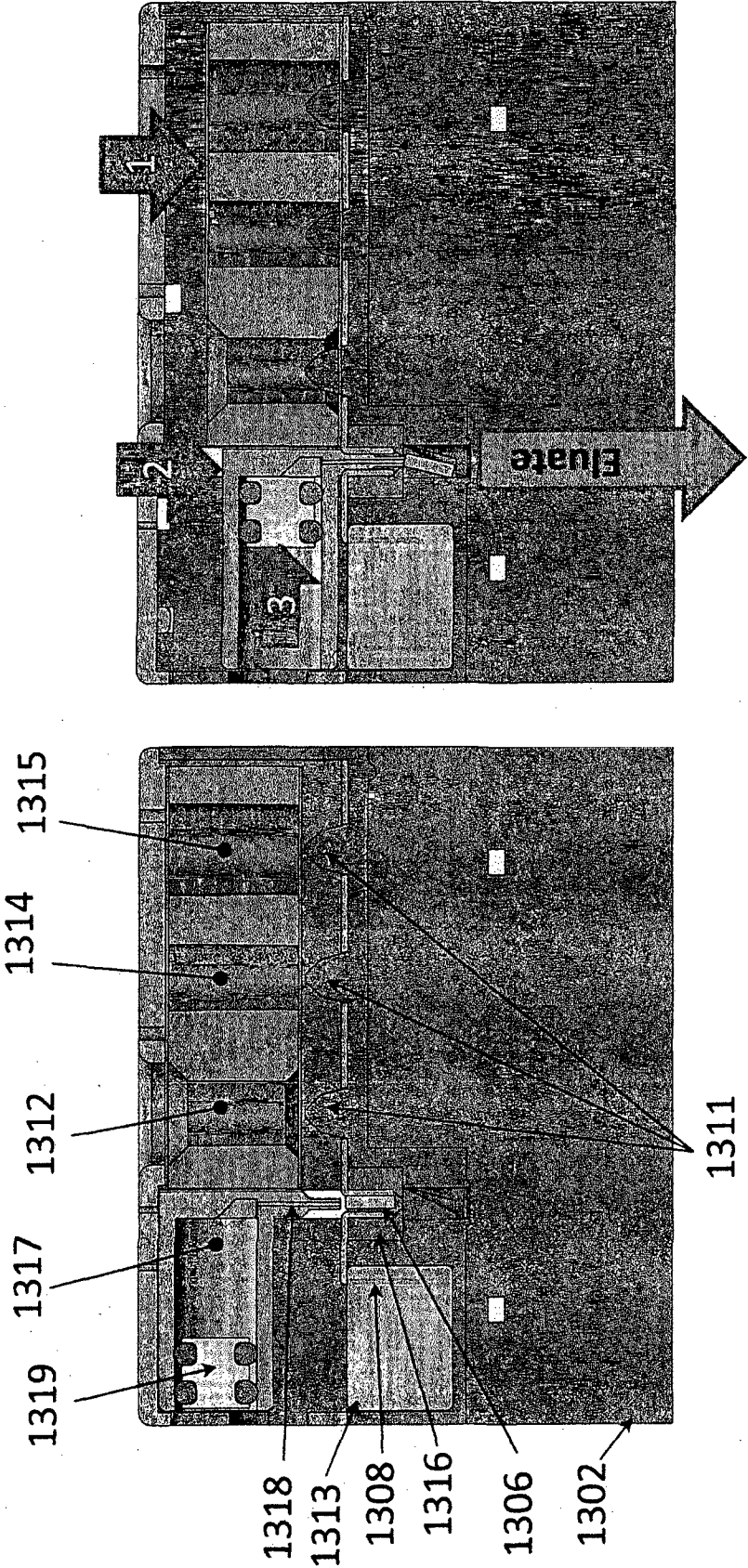
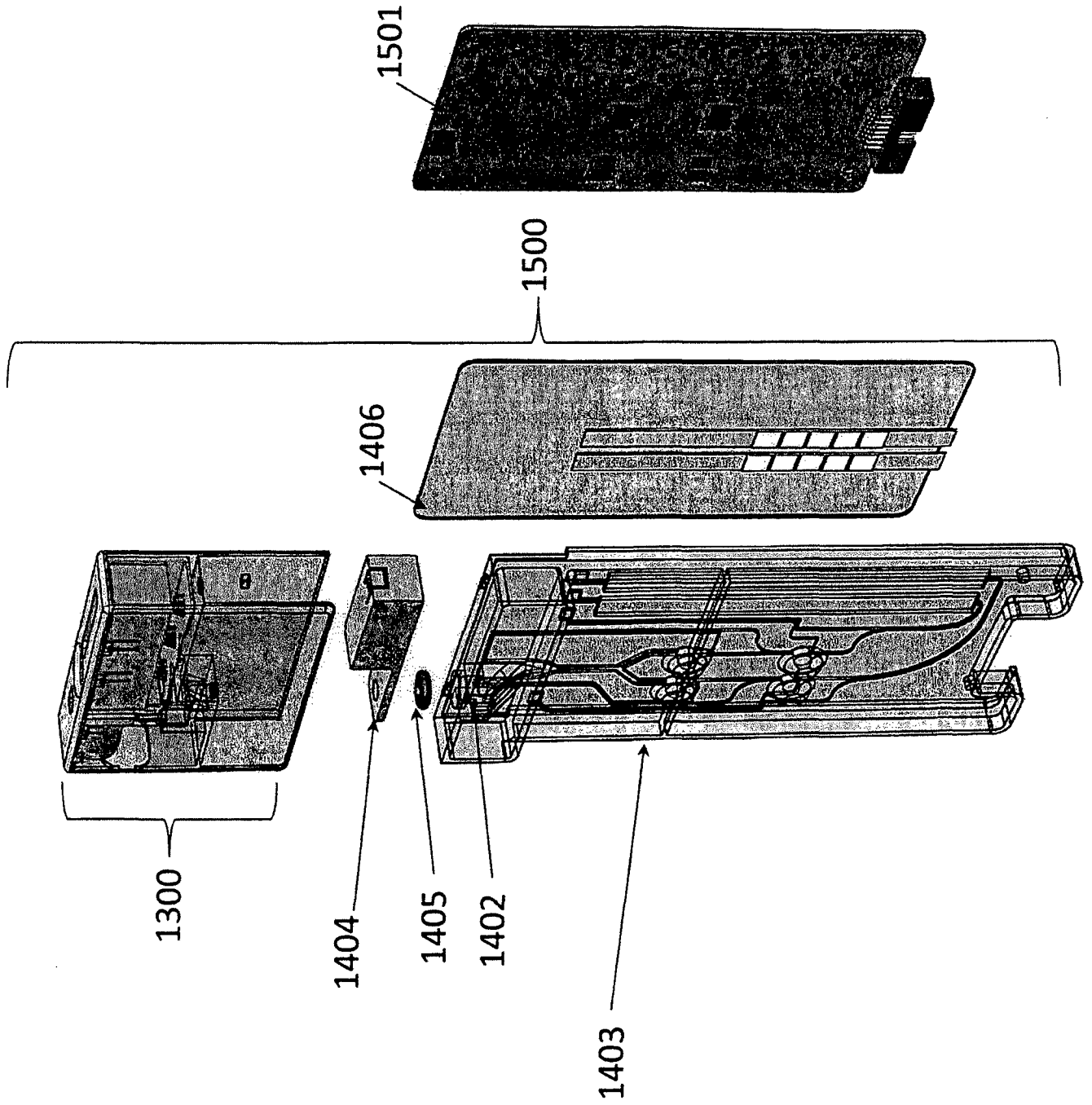


FIG. 15



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FIG. 16

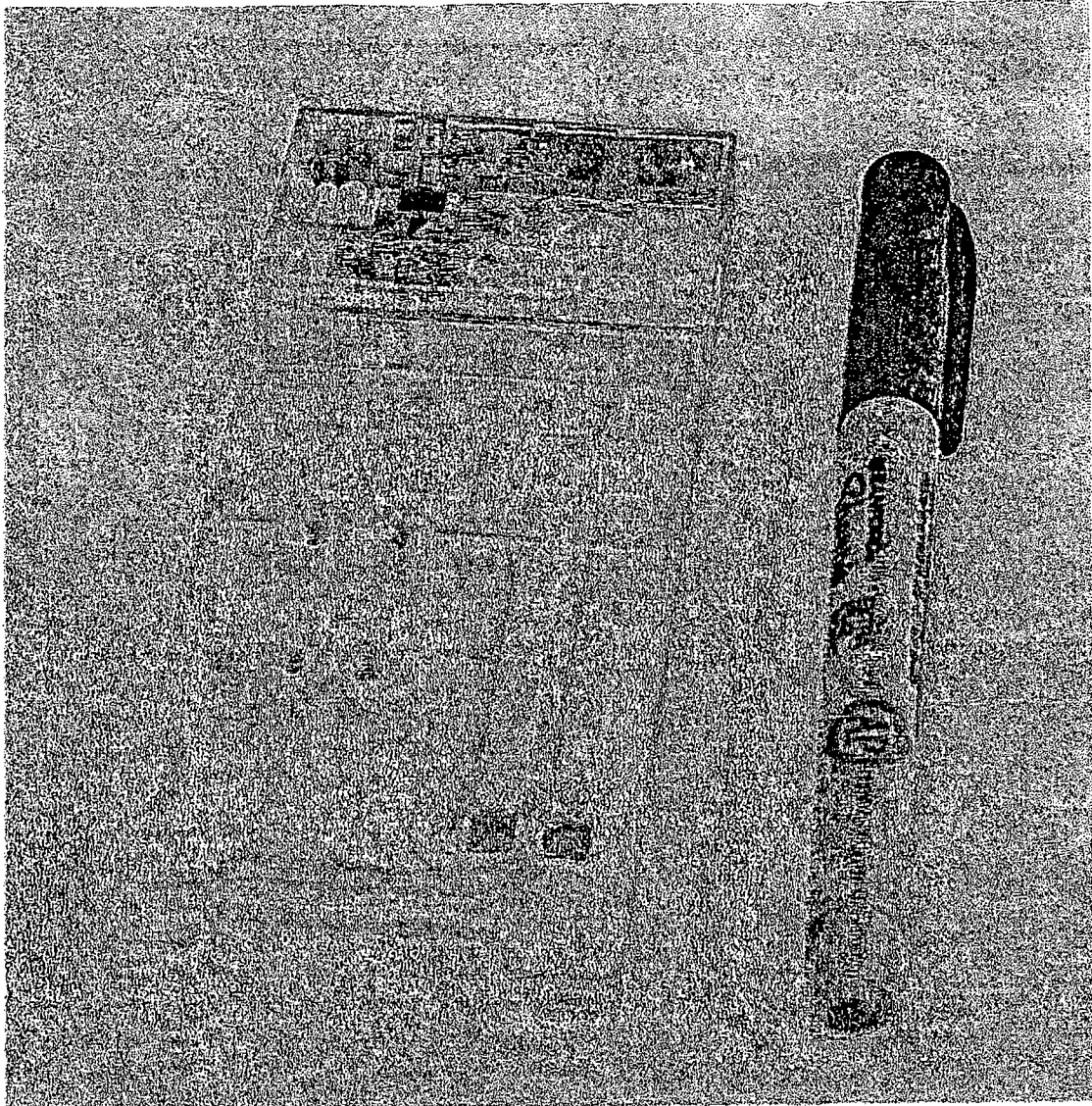


FIG. 17A

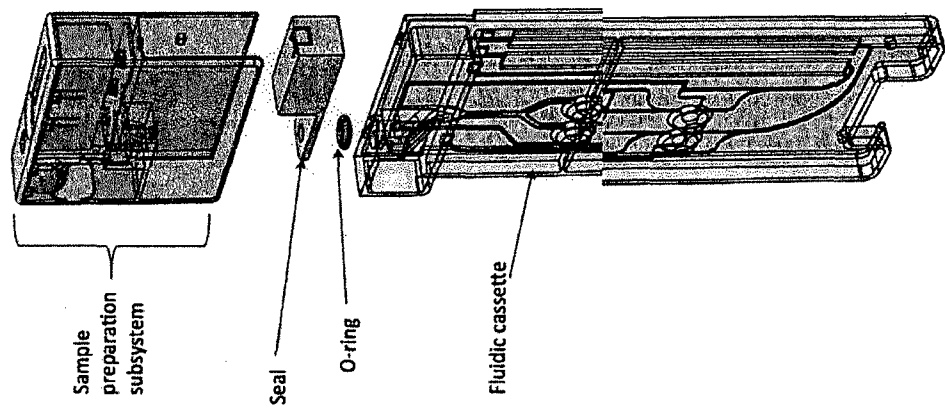


FIG. 17B

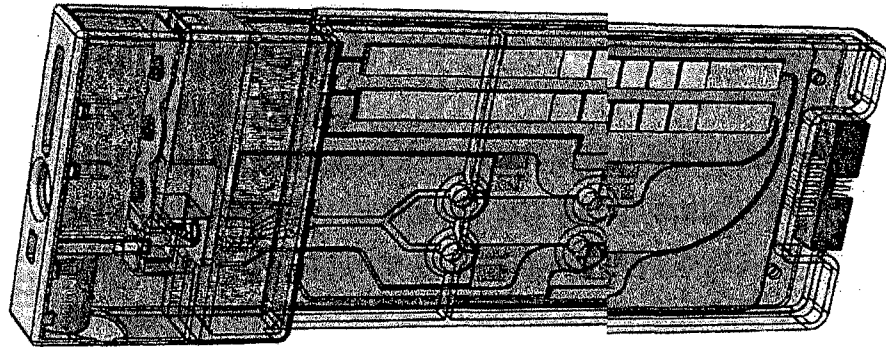
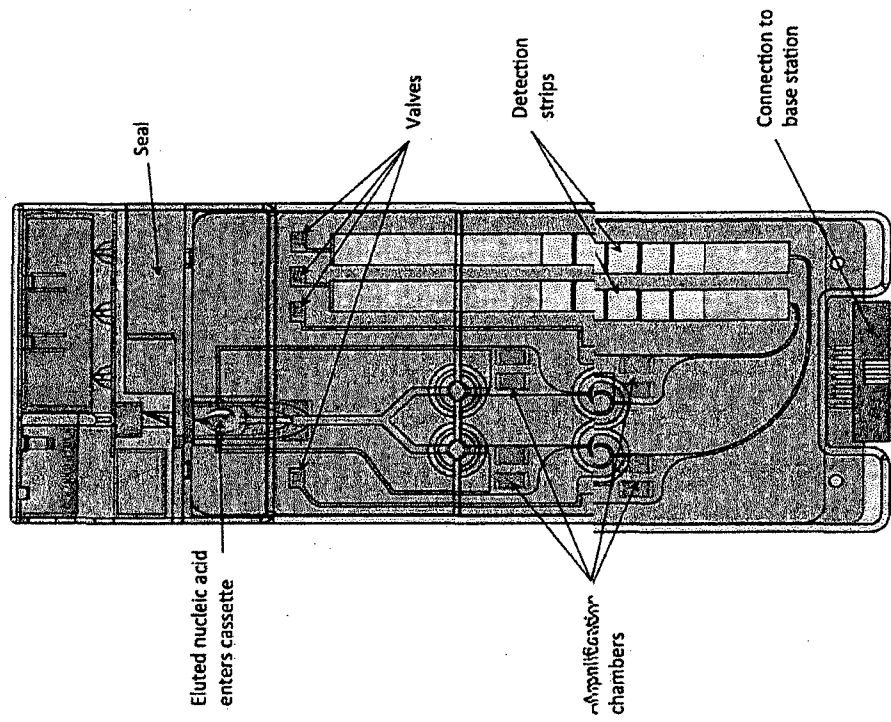


FIG. 17C



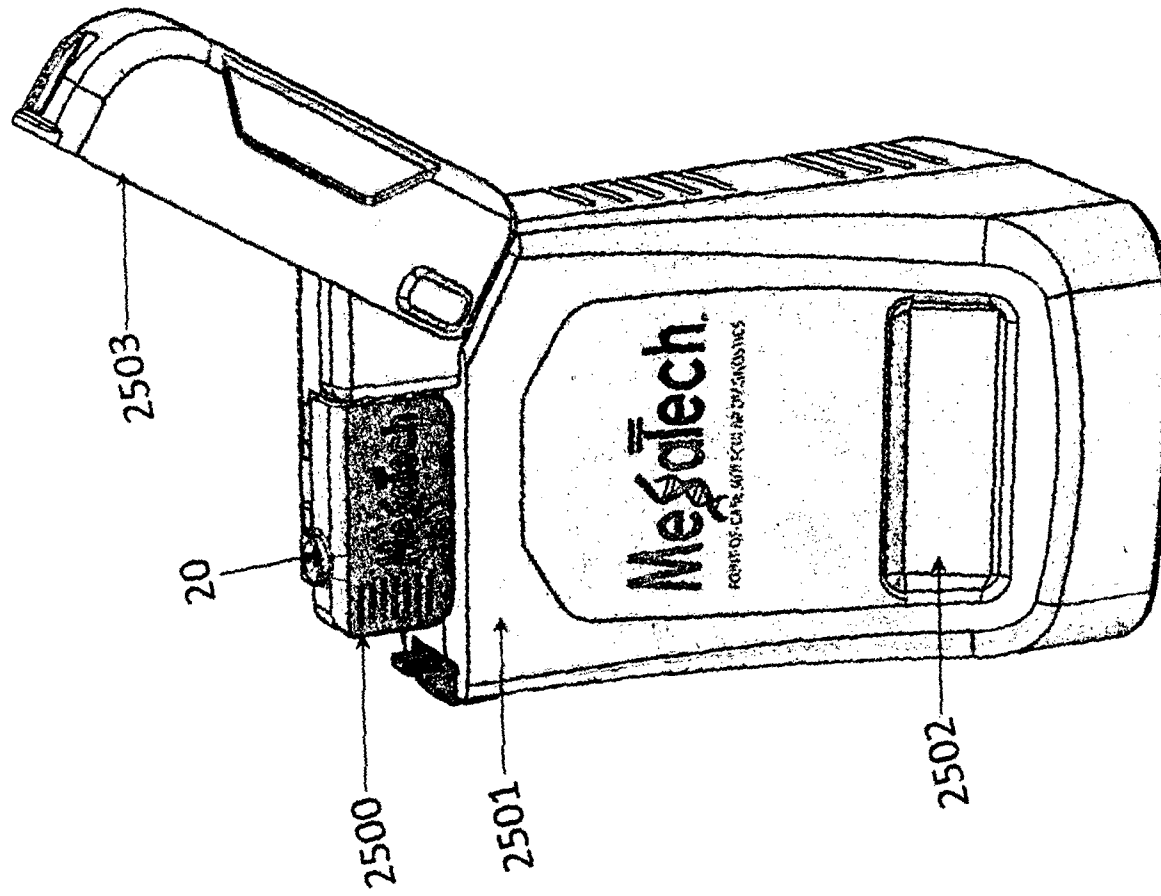


FIG. 18A

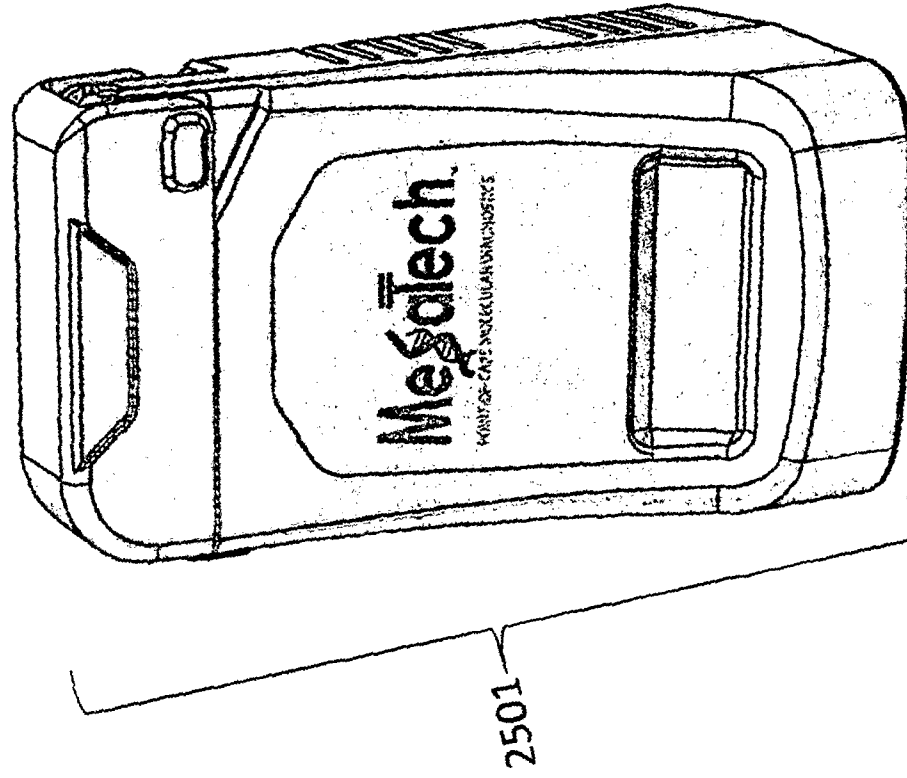


FIG. 18B



FIG. 19

FIG. 20

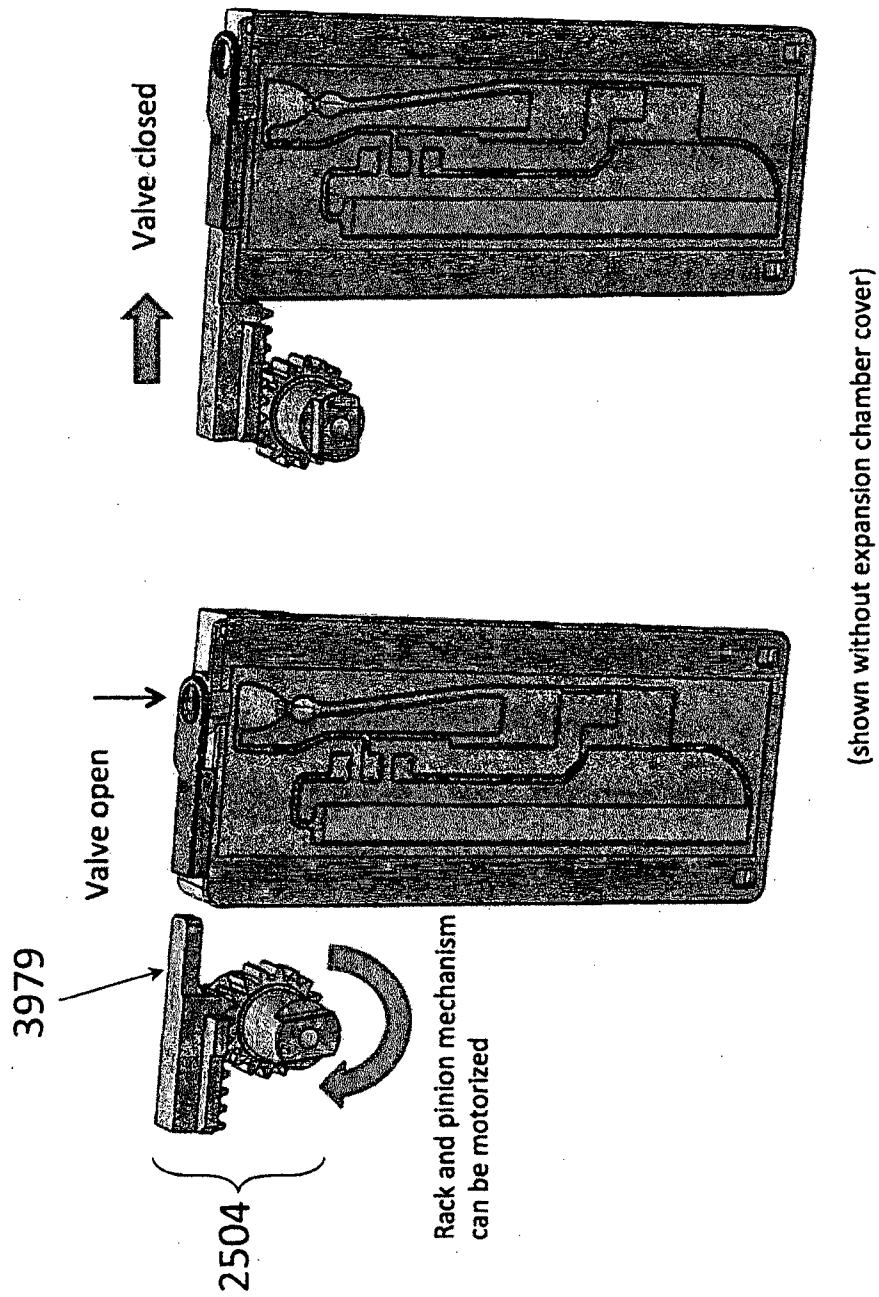


FIG. 21C
CLOSED

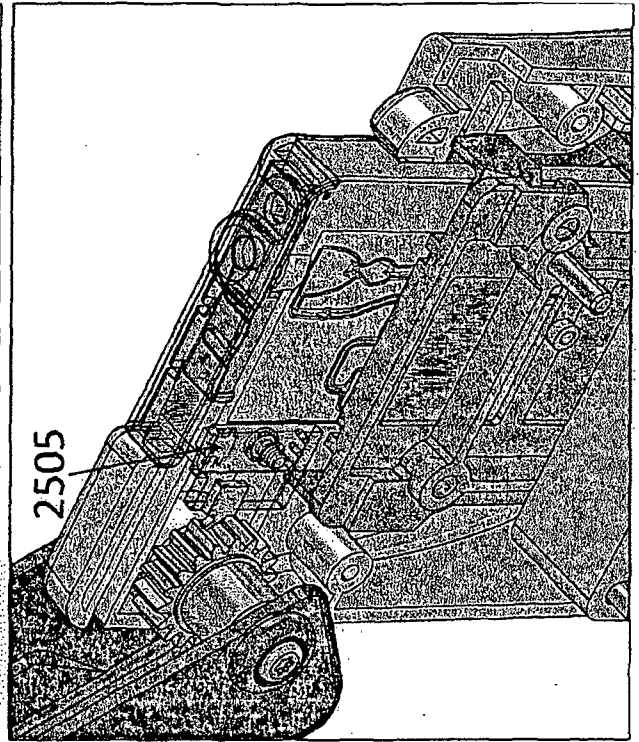
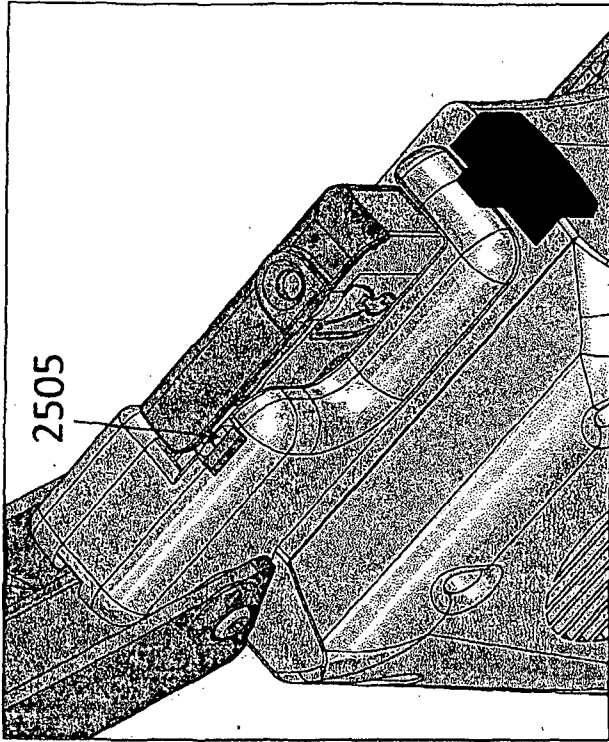


FIG. 21D

FIG. 21A
OPEN

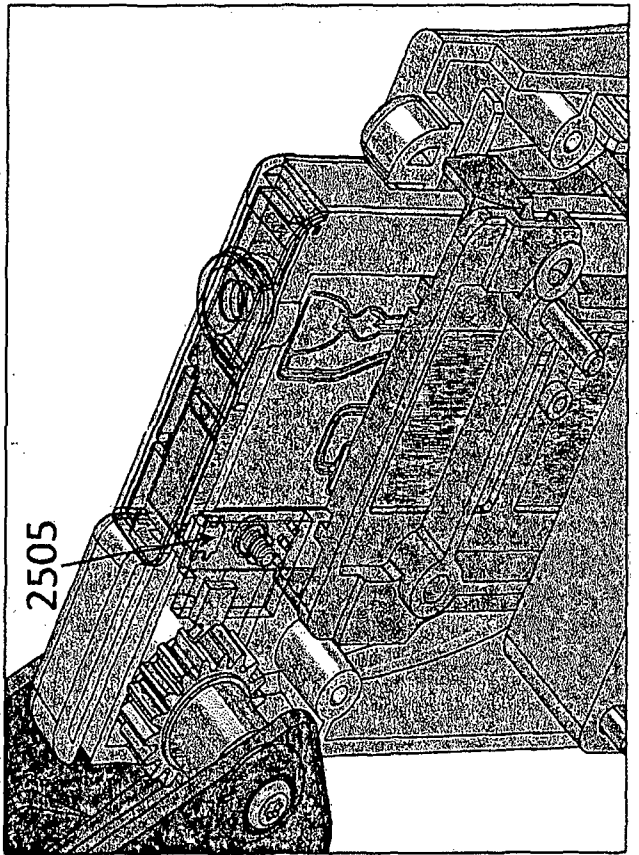
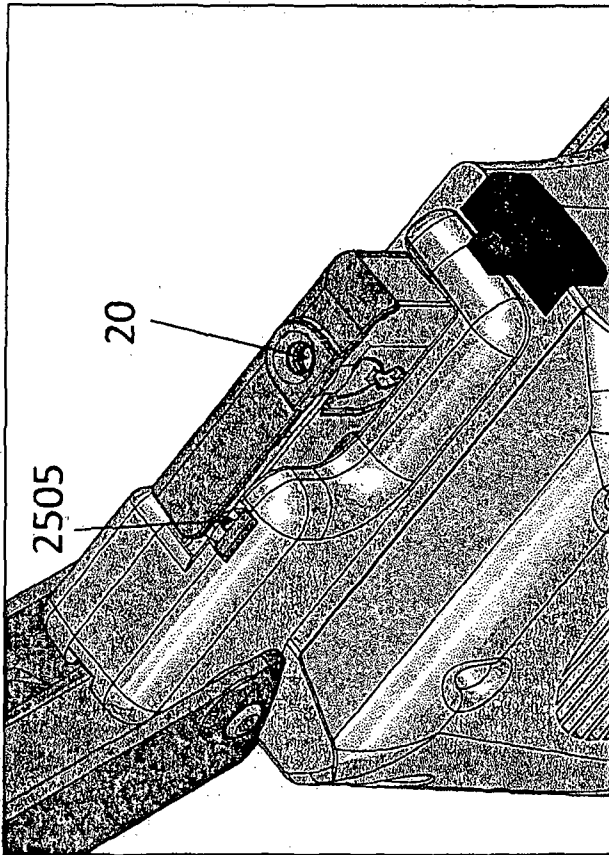
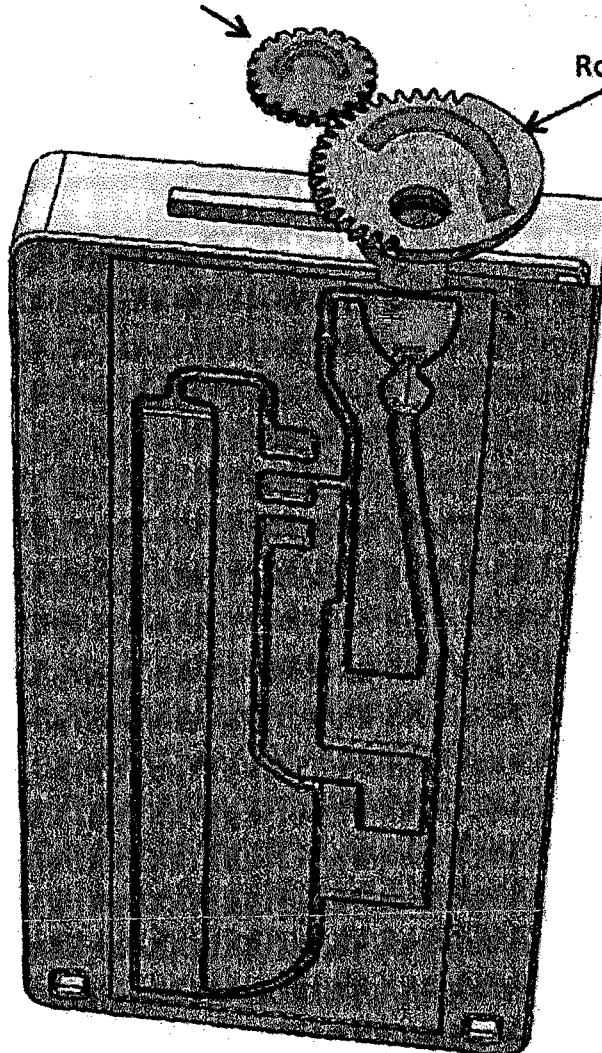


FIG. 21B

FIG. 22

Drive mechanism can be
manual or motorized

Rotating valve provide sealing



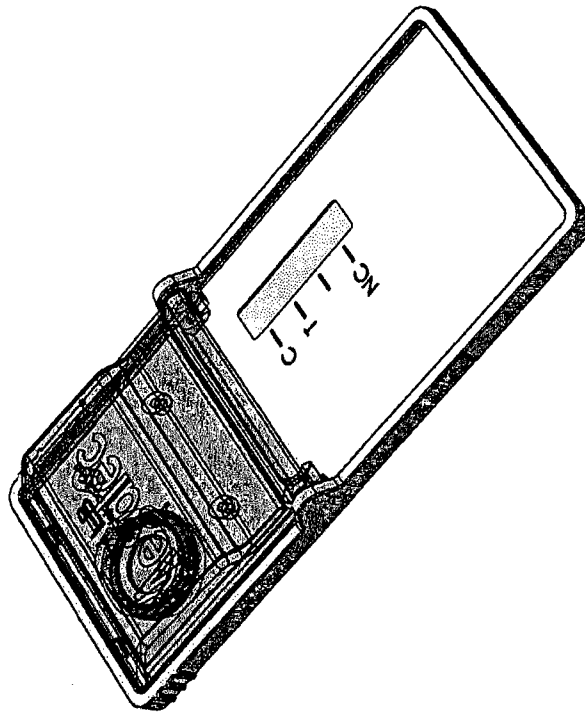


FIG. 23B

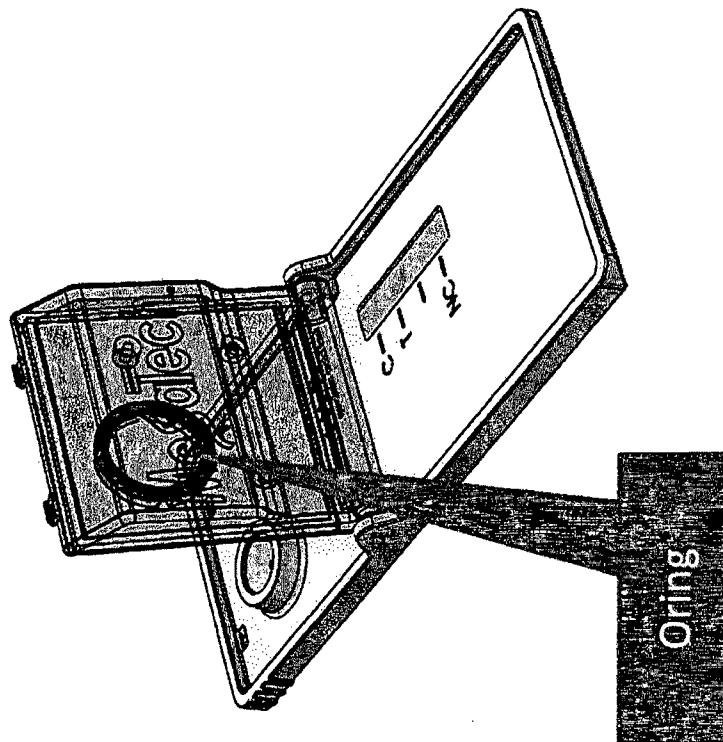


FIG. 23A

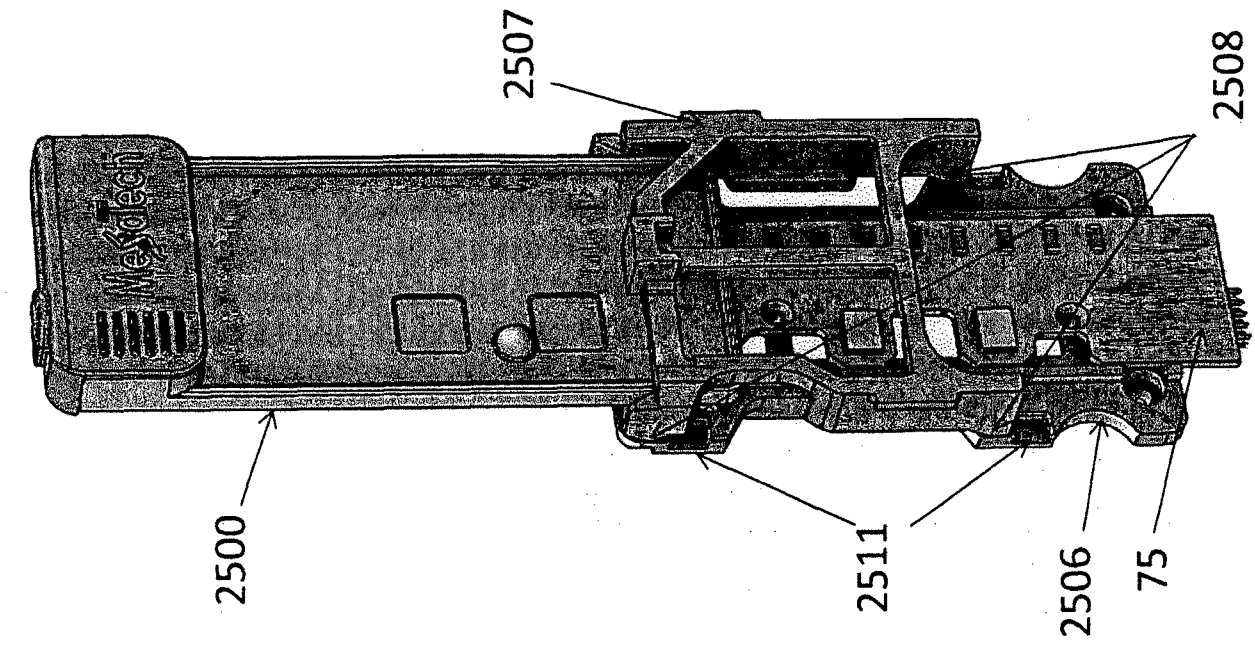


FIG. 24B

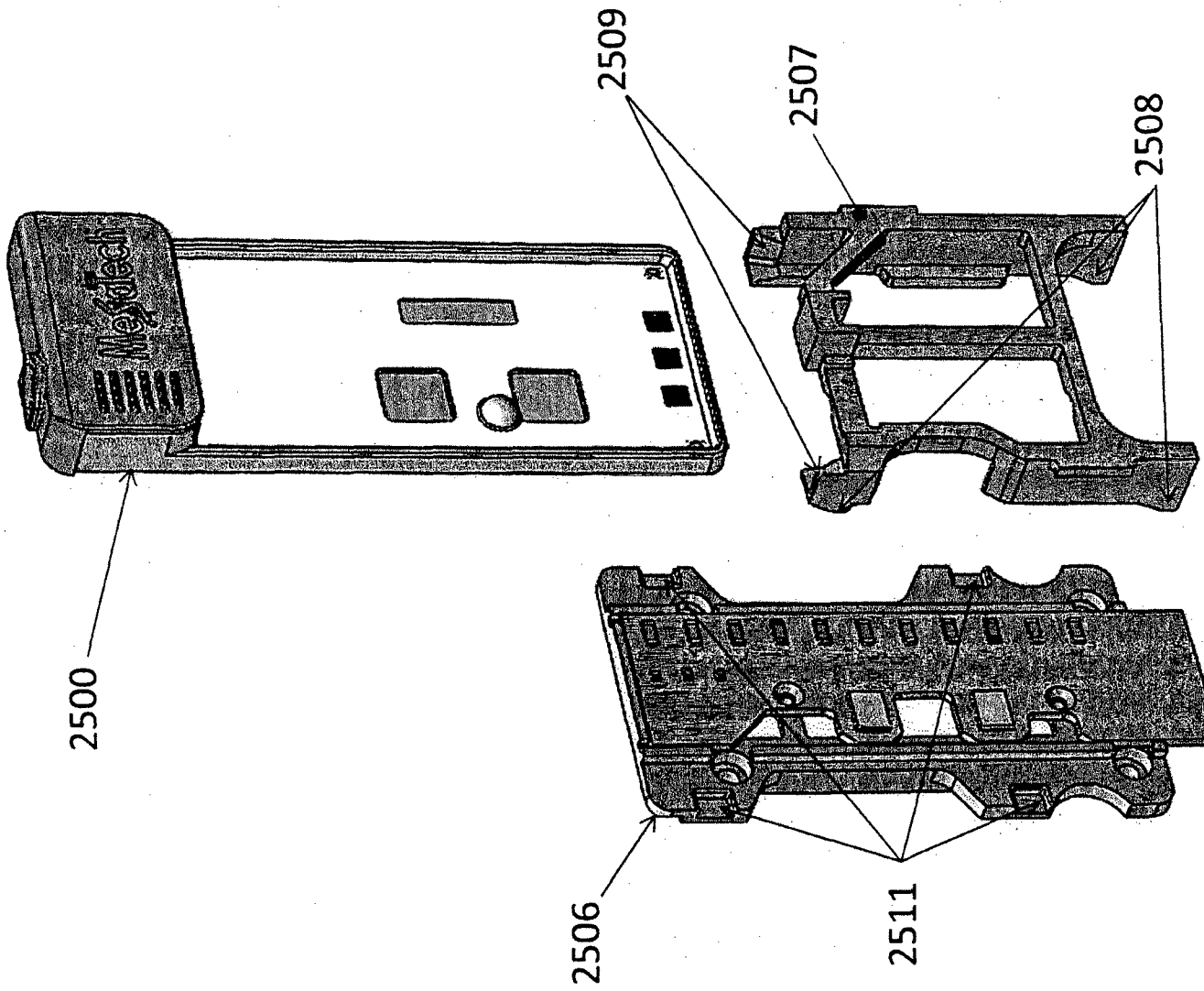
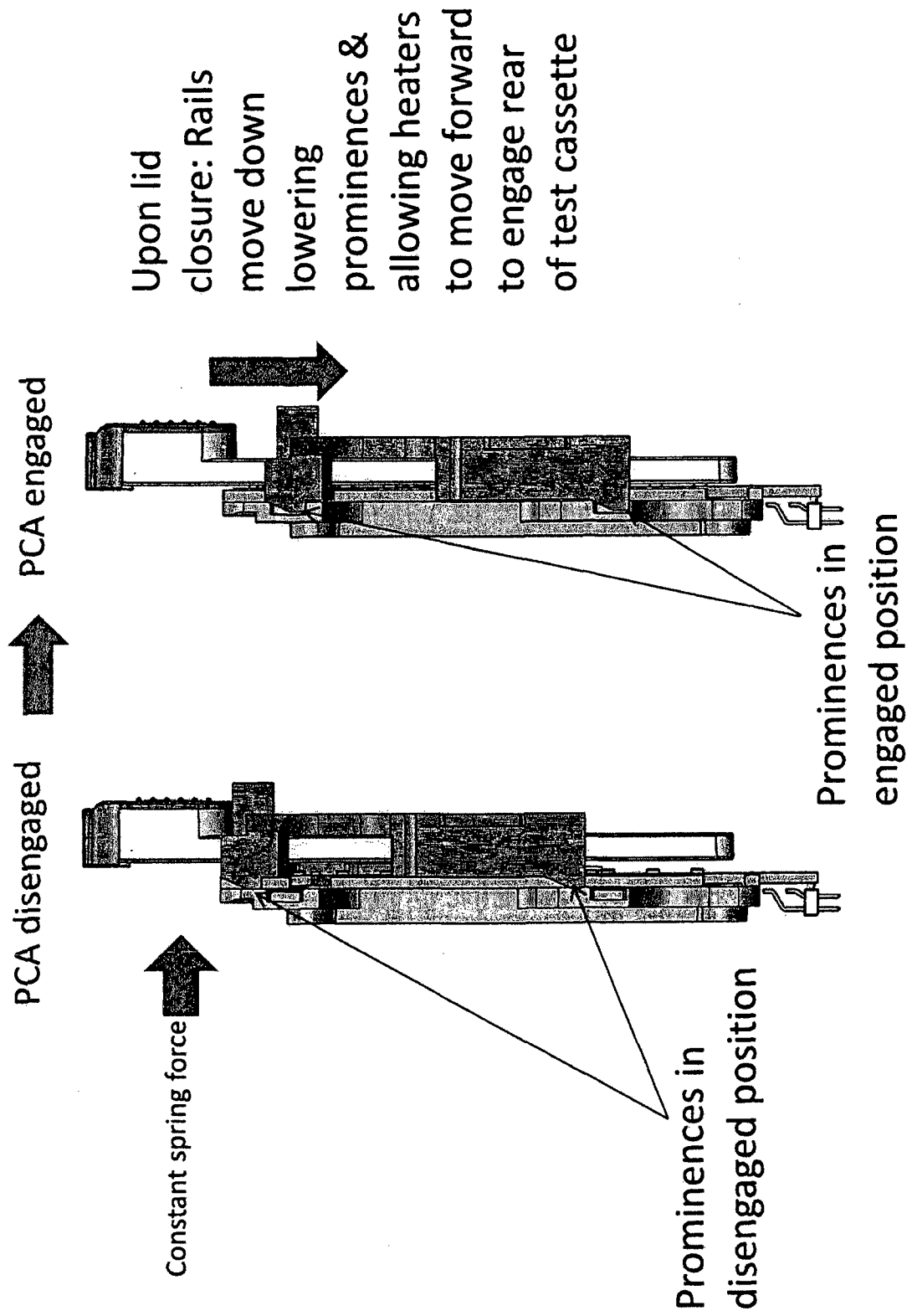


FIG. 24A

FIG. 25



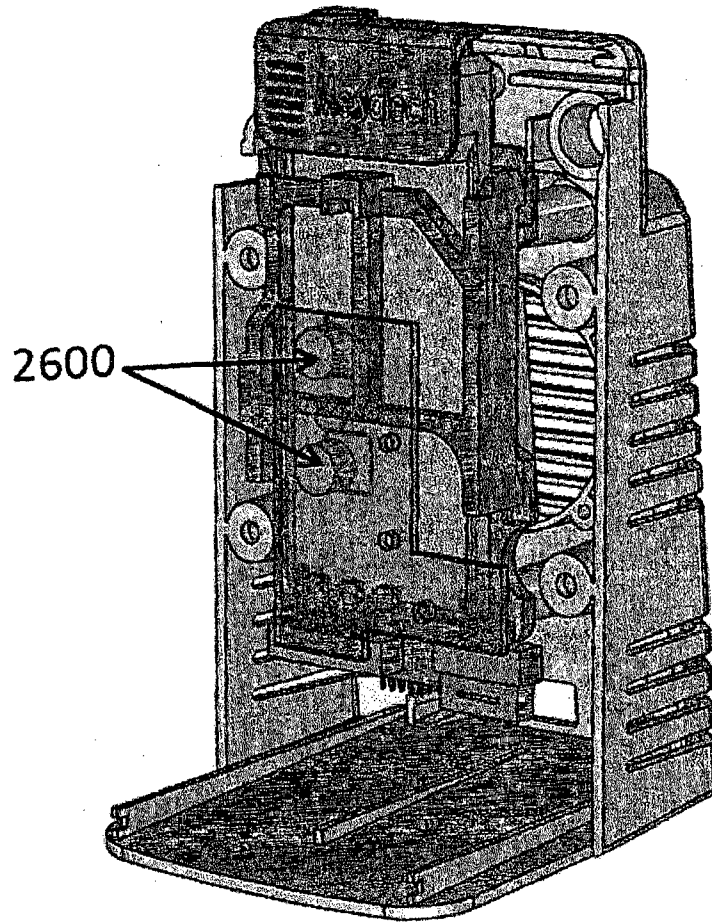


FIG. 26

FIG. 27B

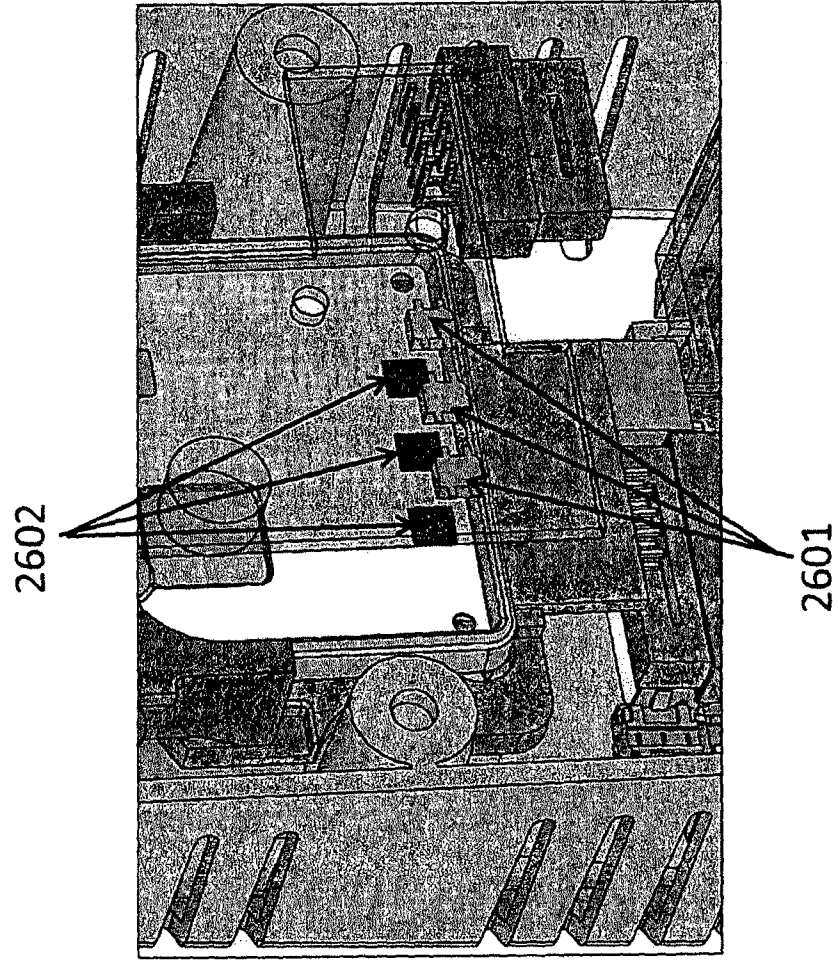


FIG. 27A

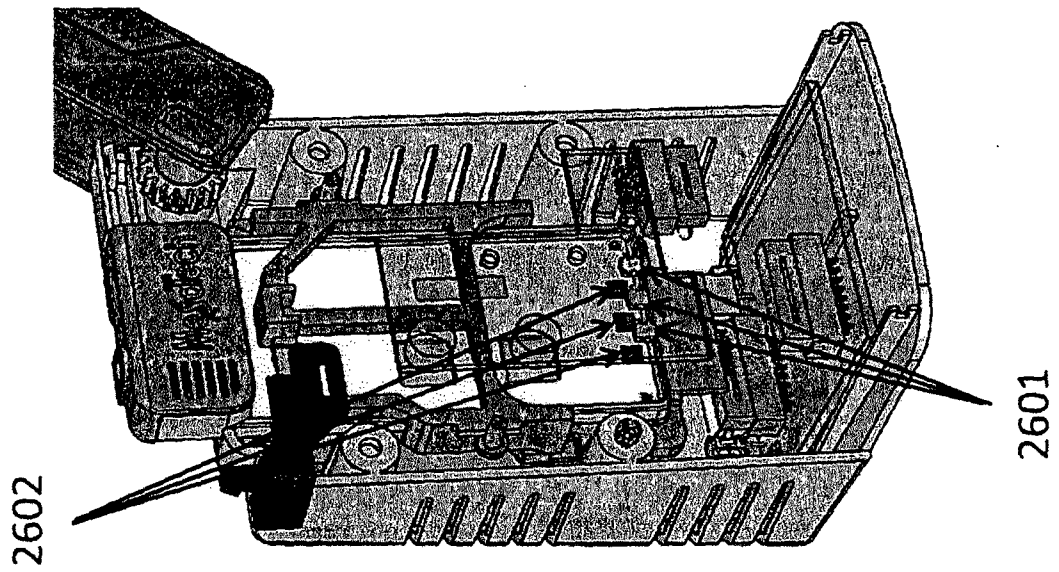


FIG. 28B

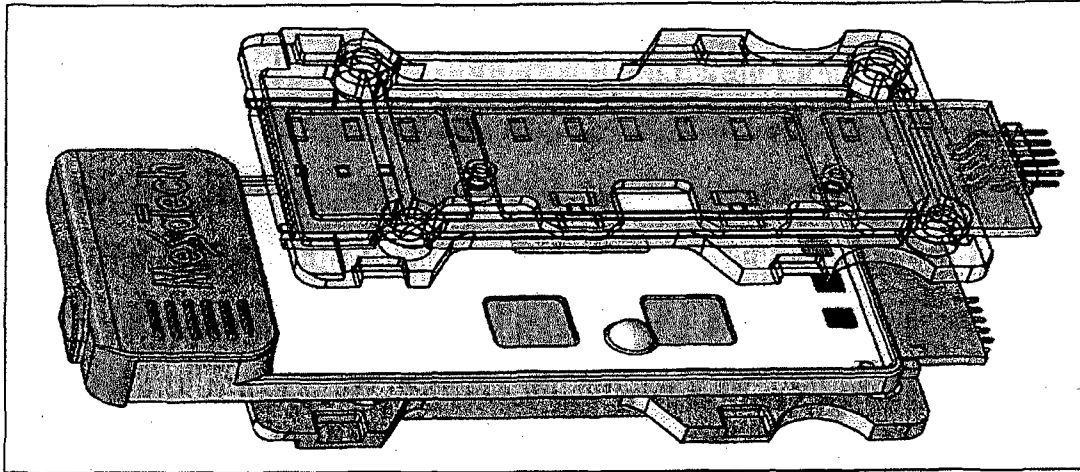


FIG. 28A

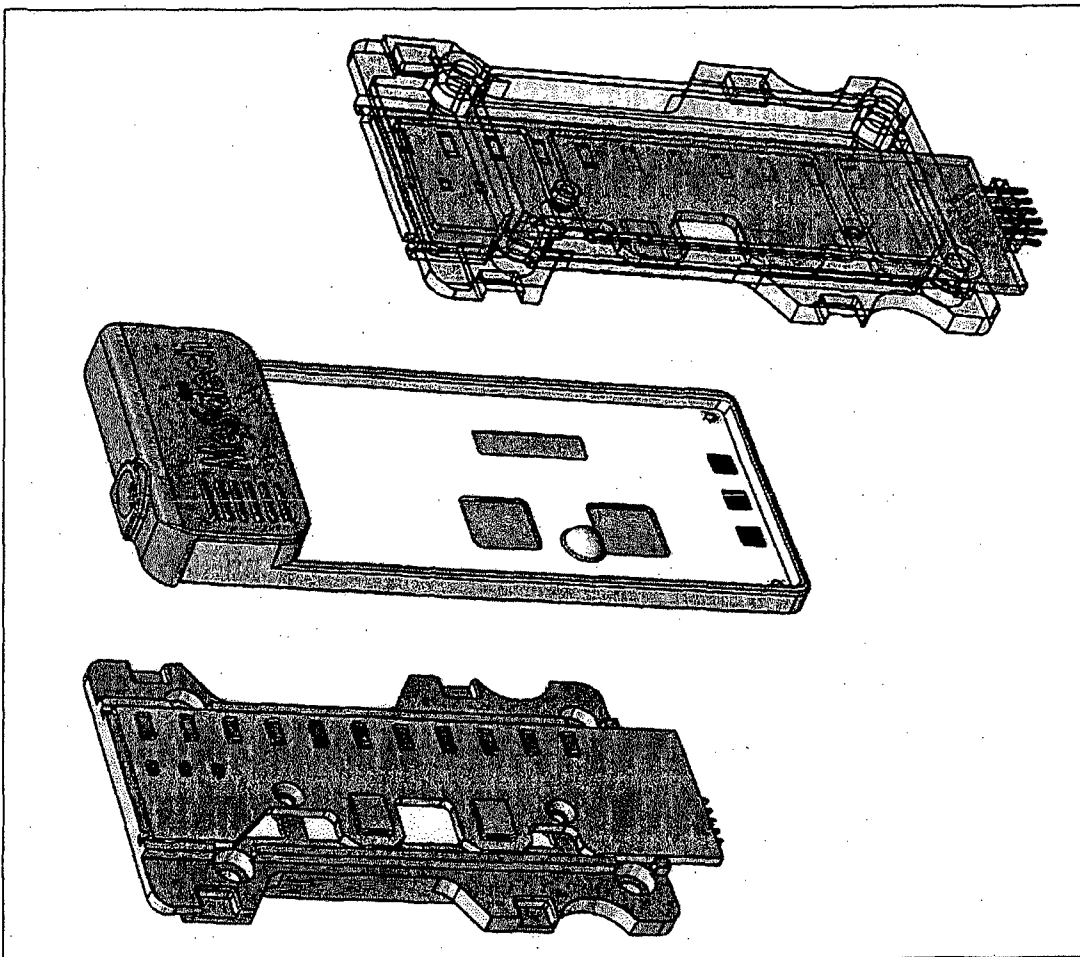


FIG. 29A

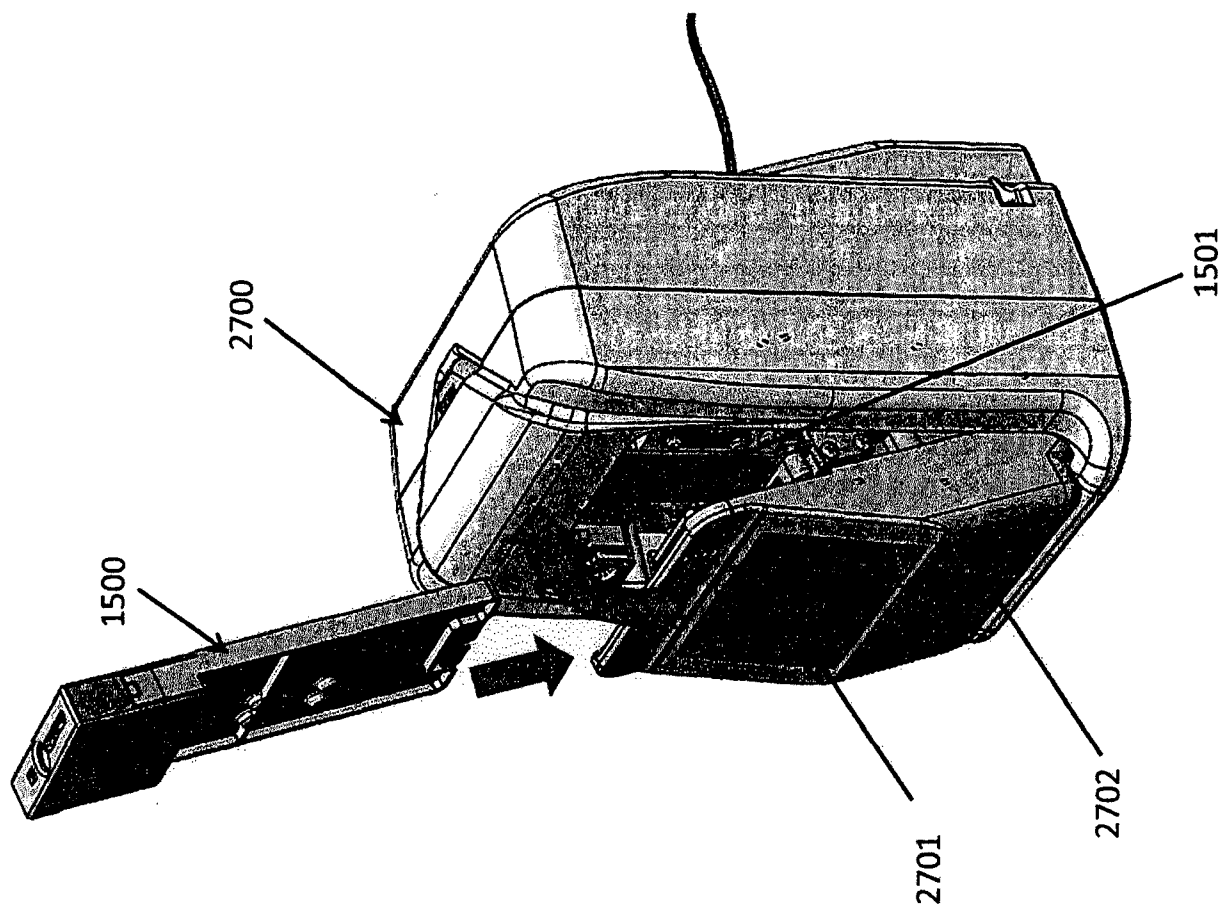
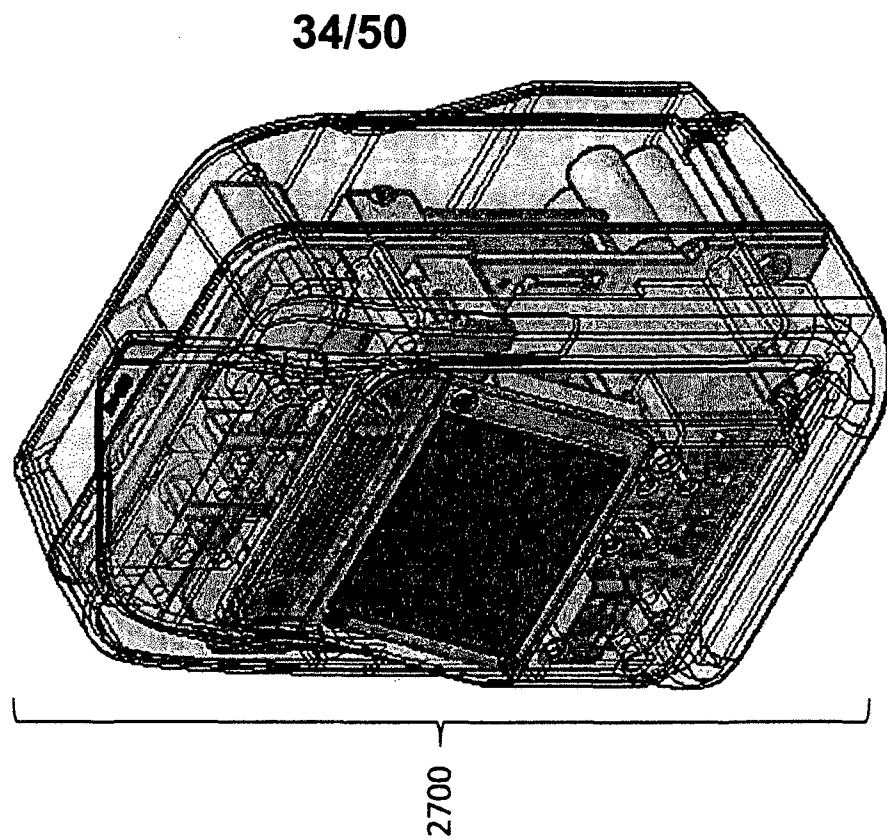


FIG. 29B



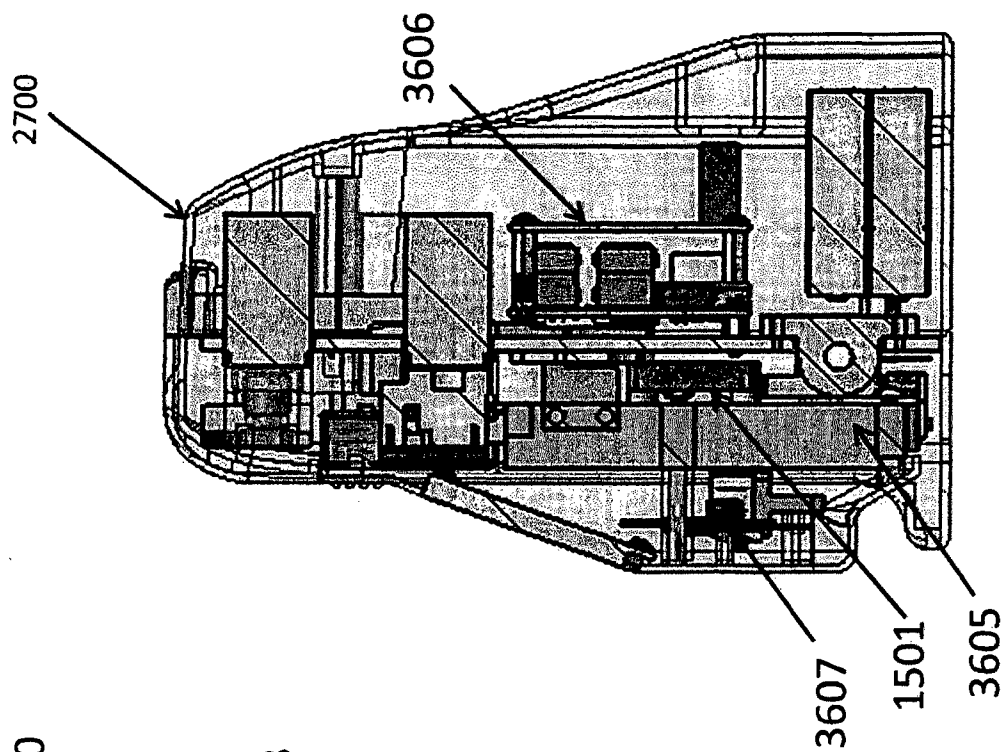


FIG. 30B

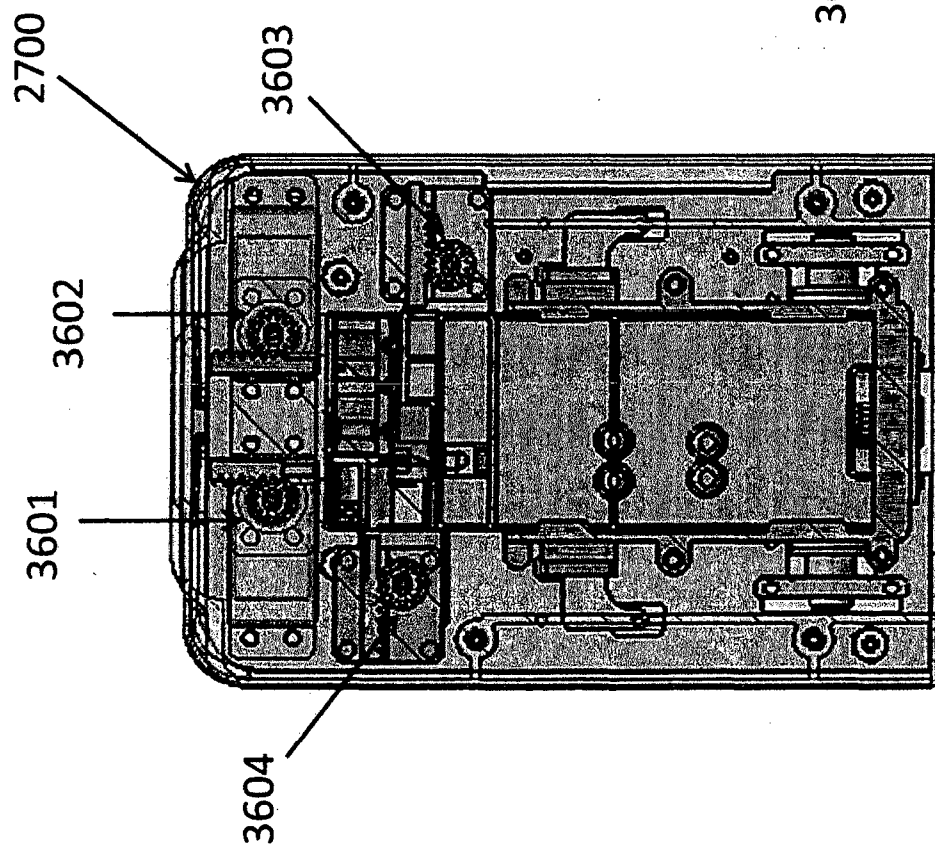


FIG. 30A

FIG. 31

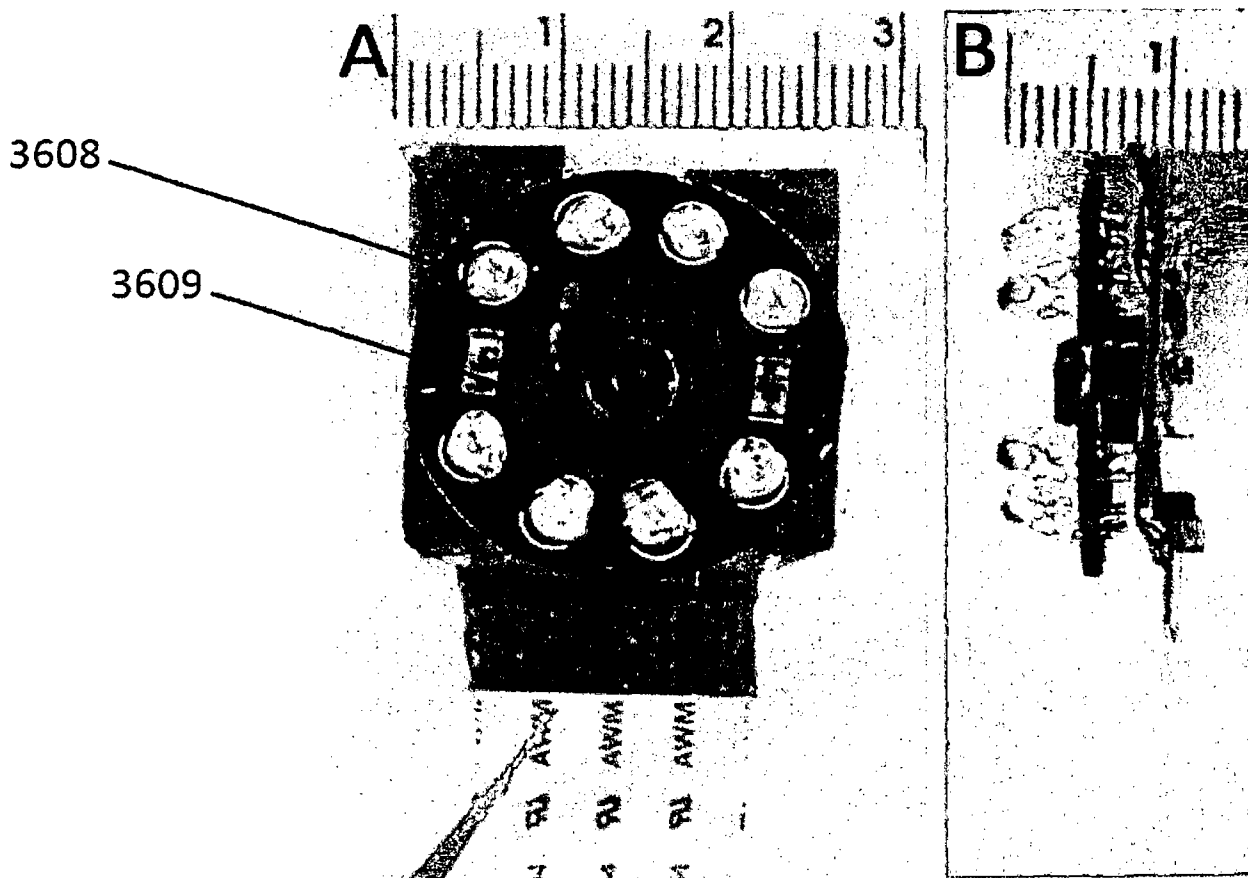


FIG. 32B

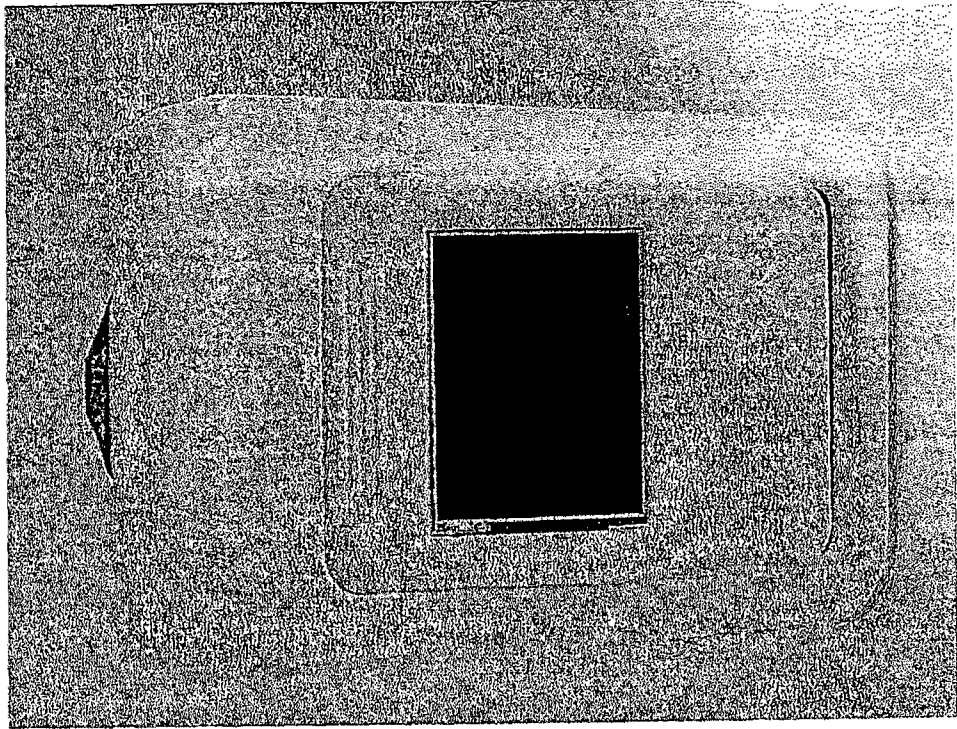


FIG. 32A

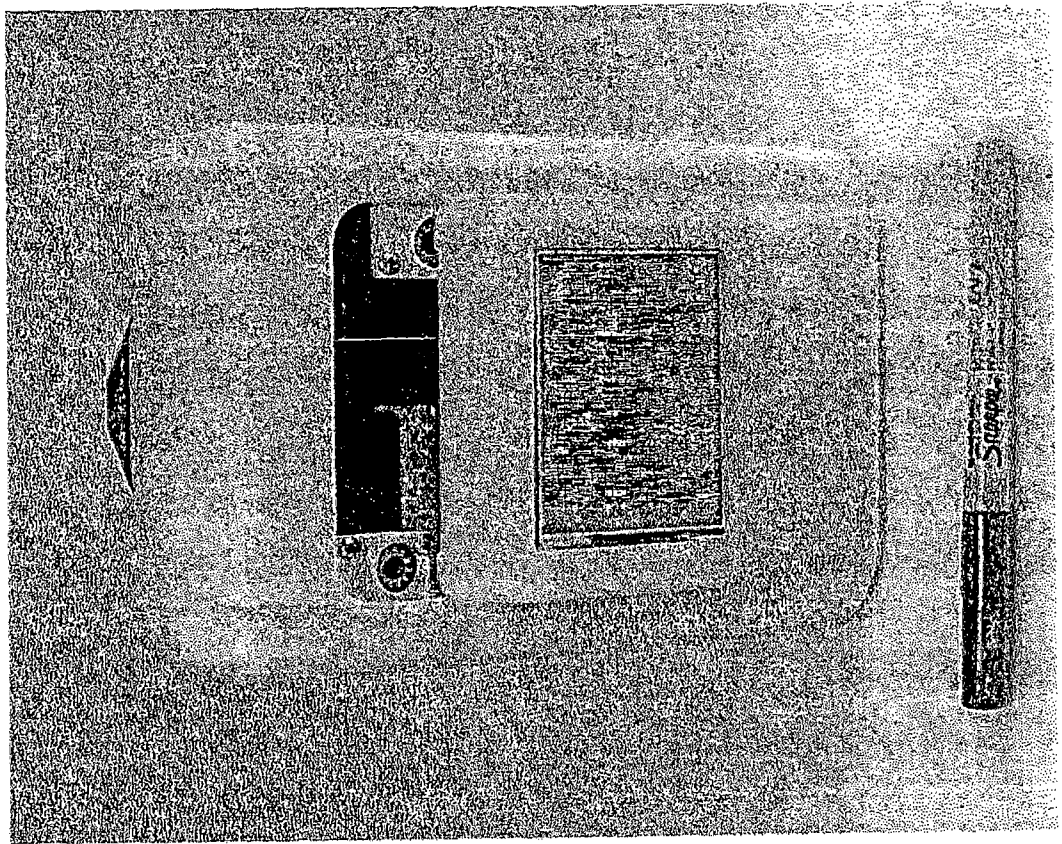


FIG. 33

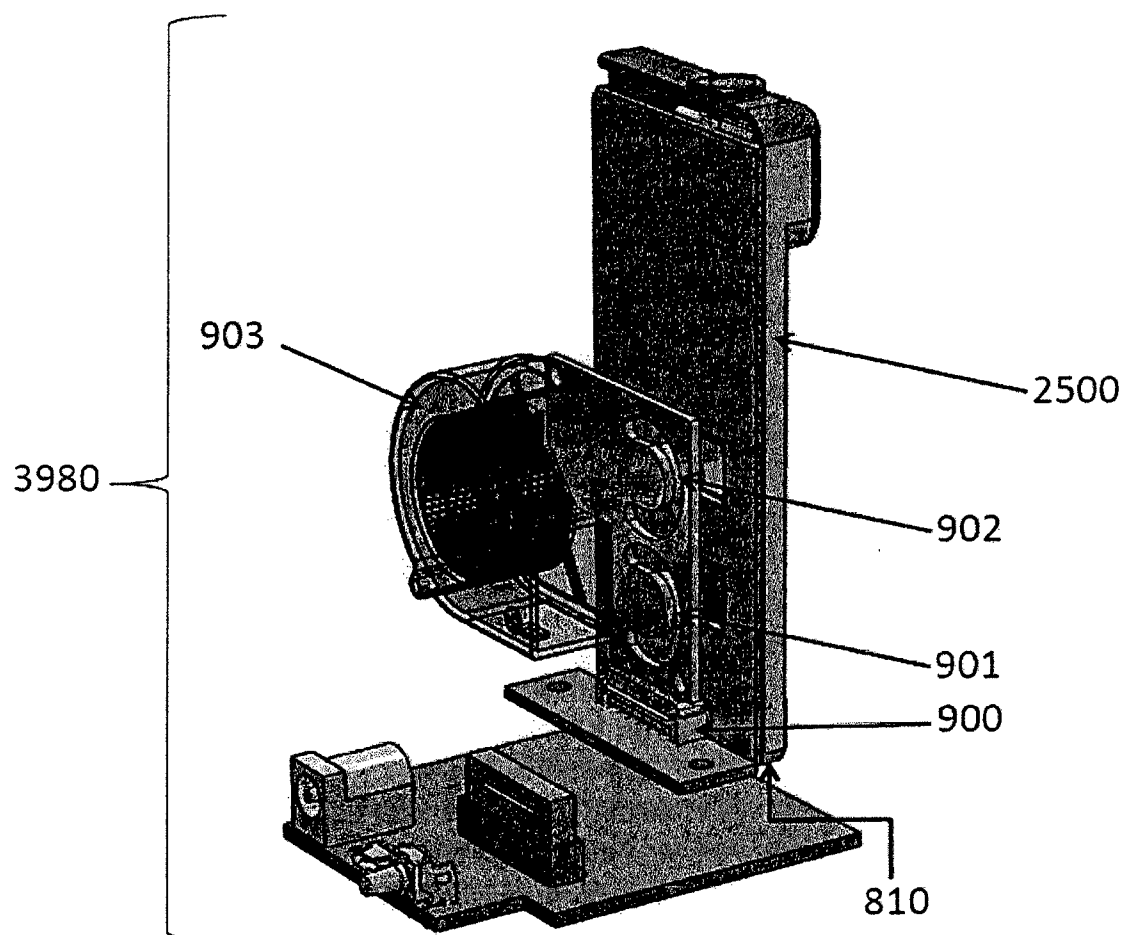


FIG. 34

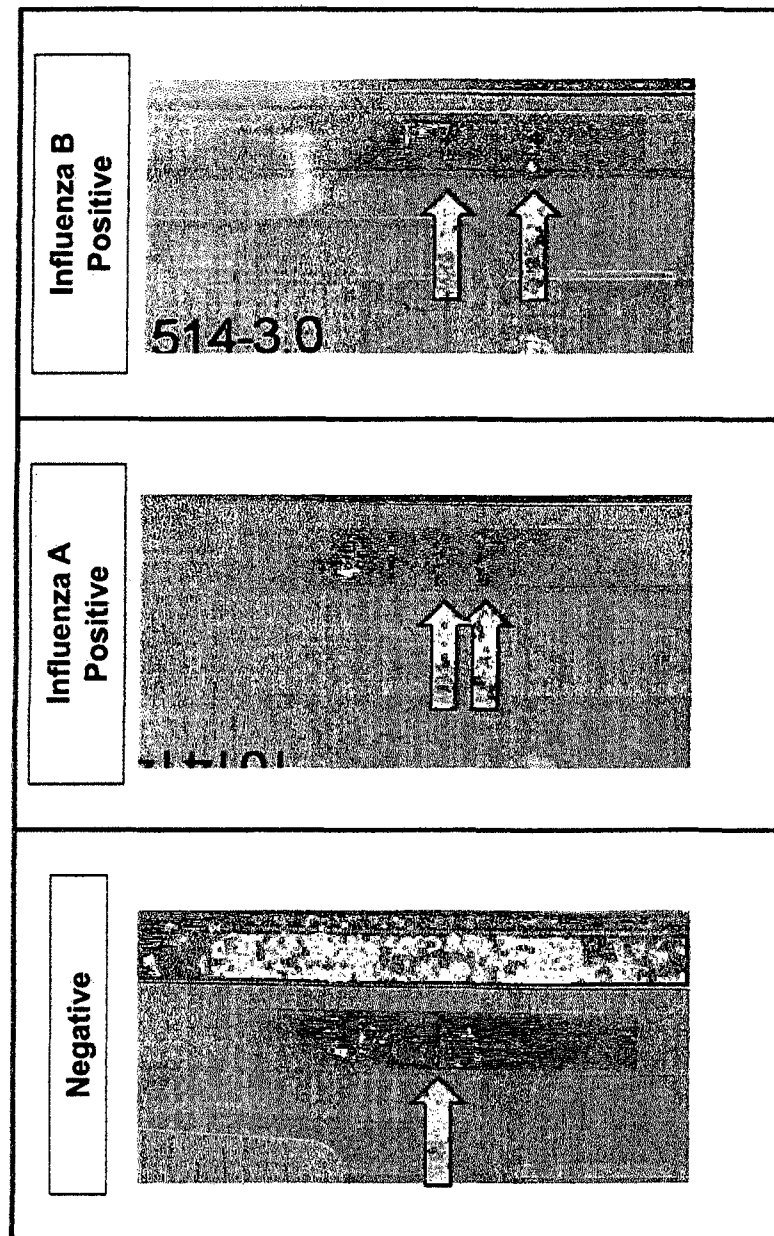


FIG. 35

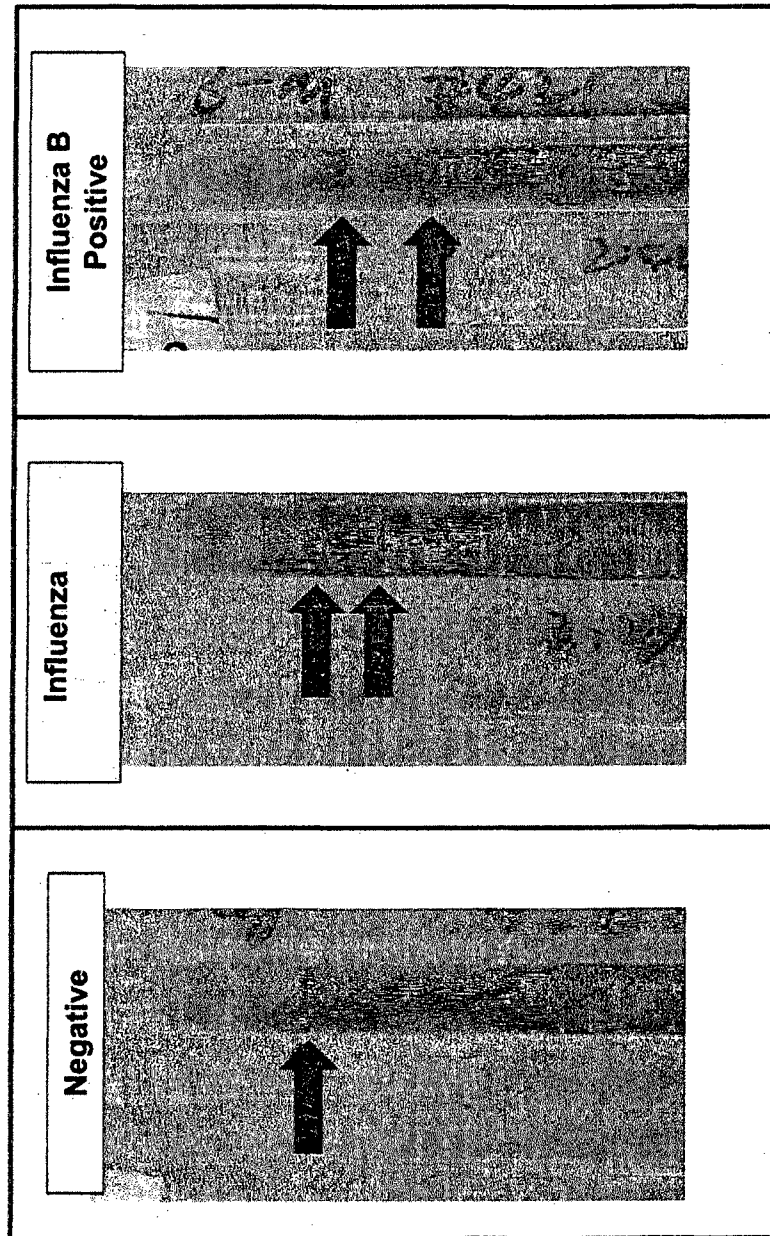
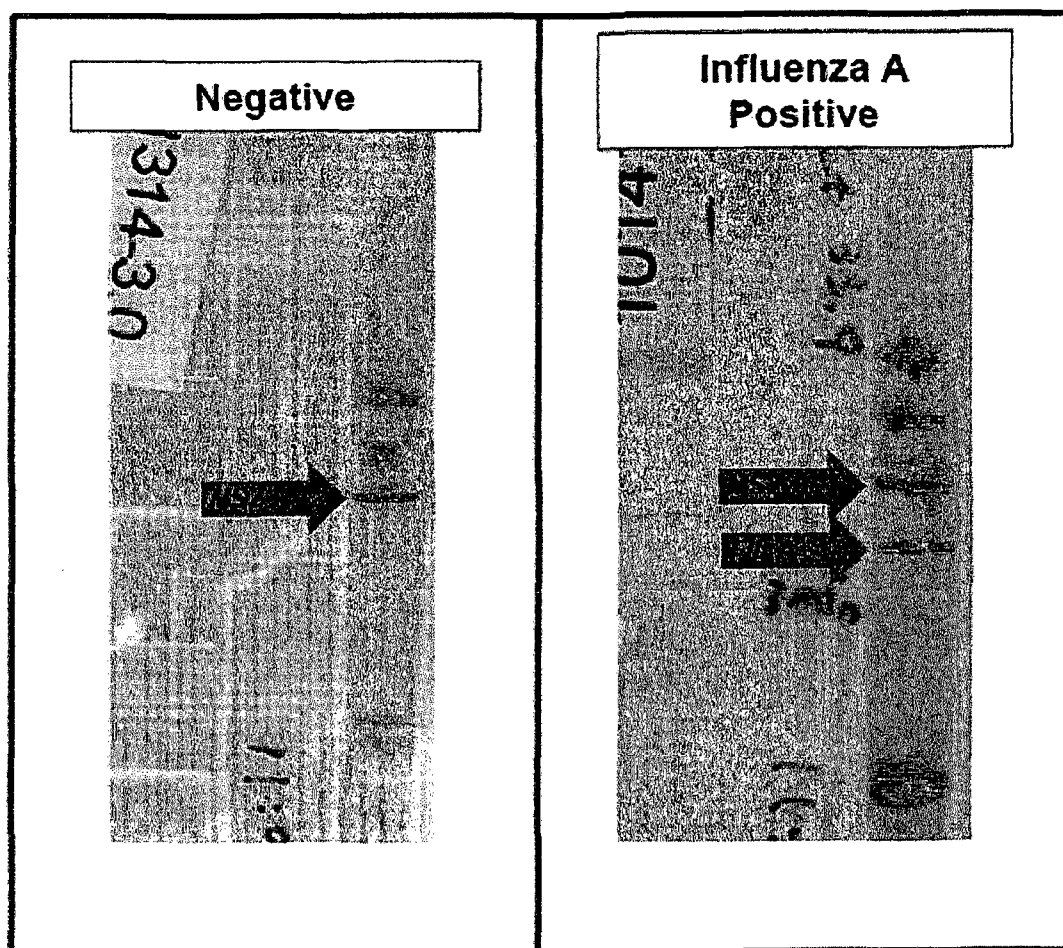


FIG. 36



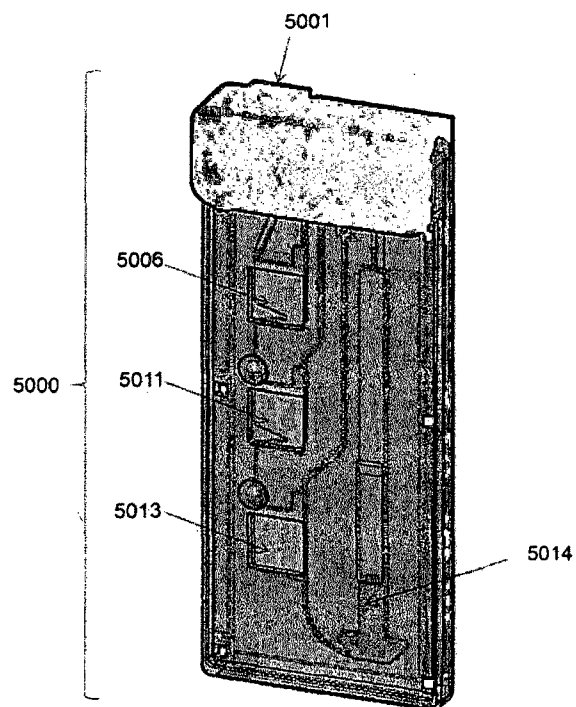


FIG. 37A

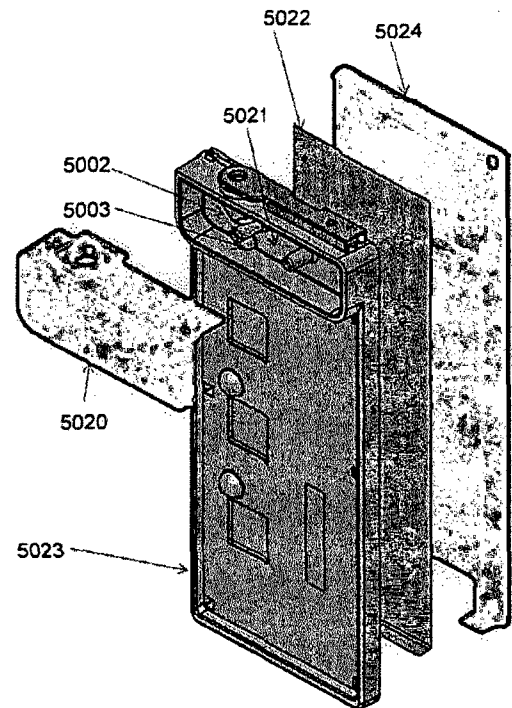


FIG. 37B

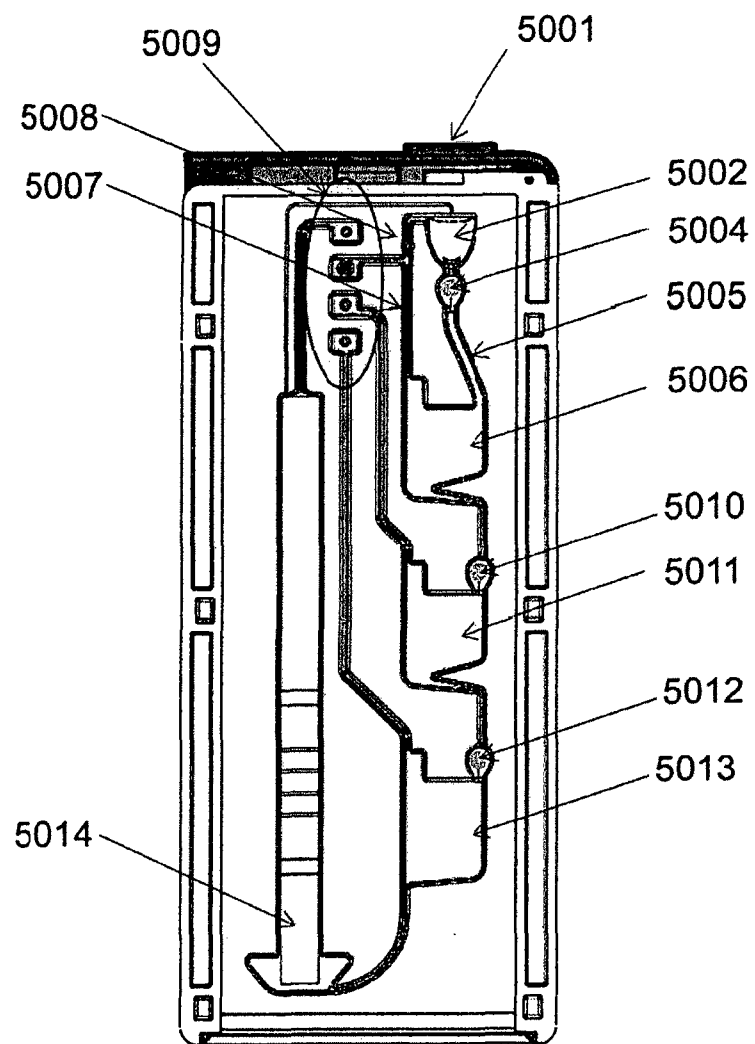


FIG. 38

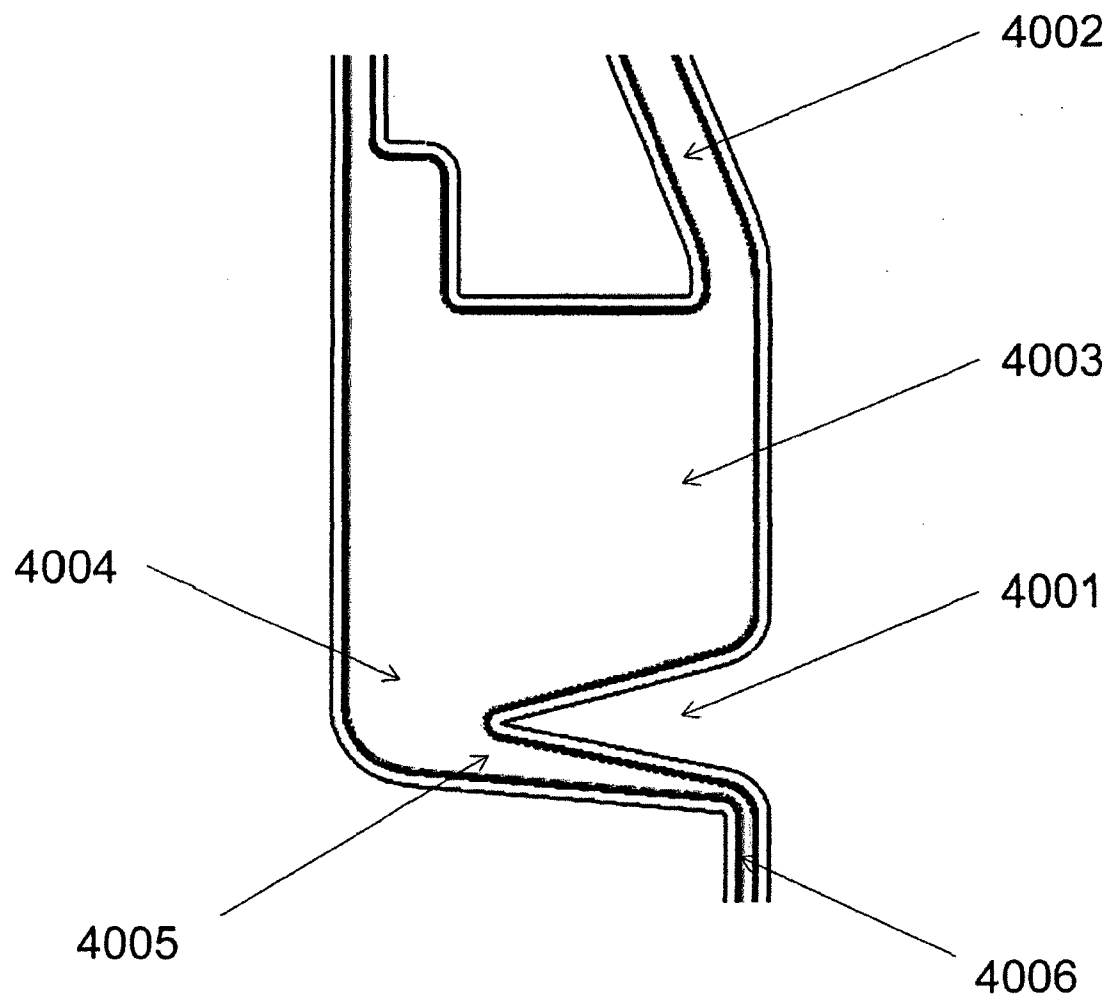


FIG. 39

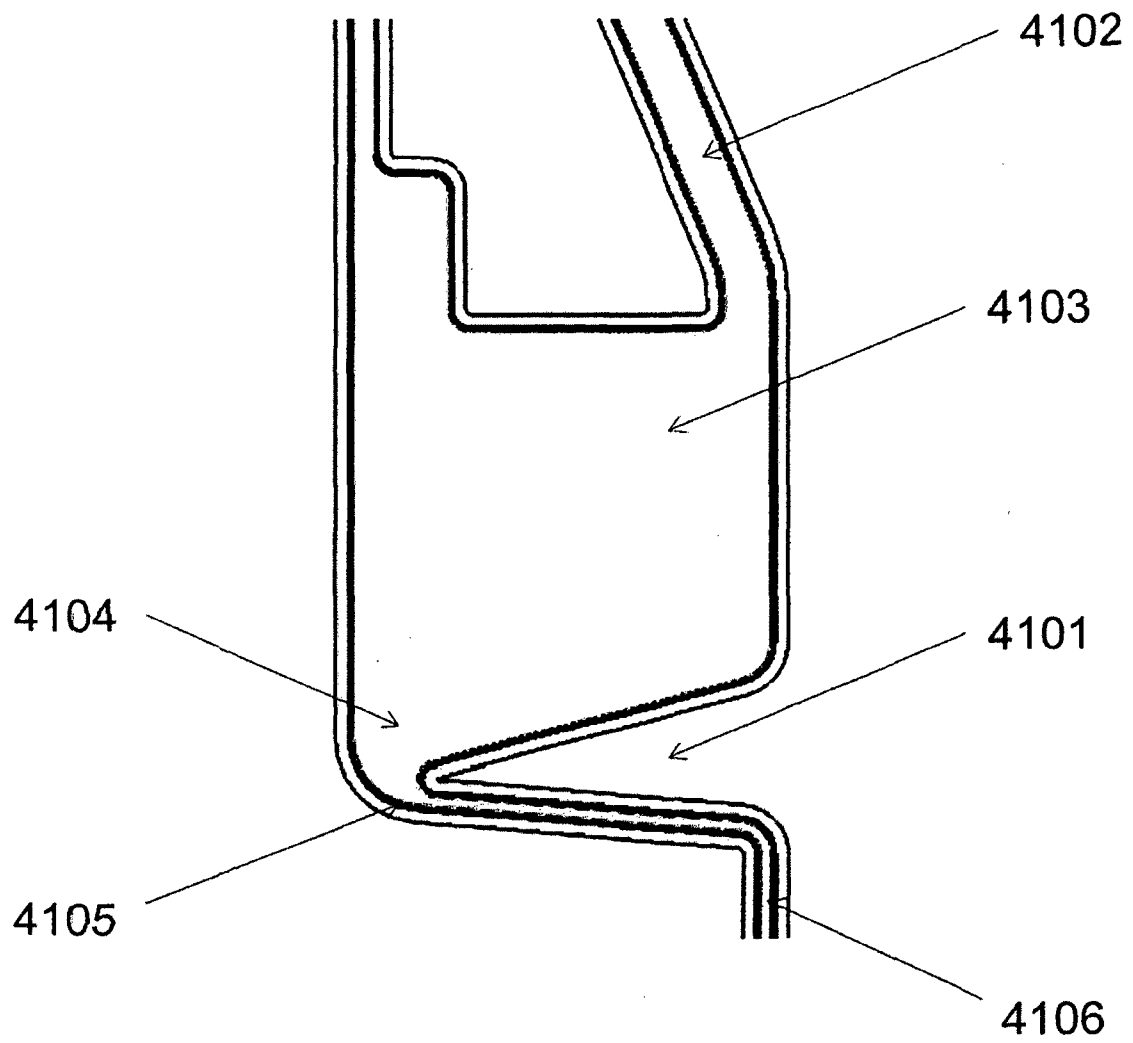


FIG. 40

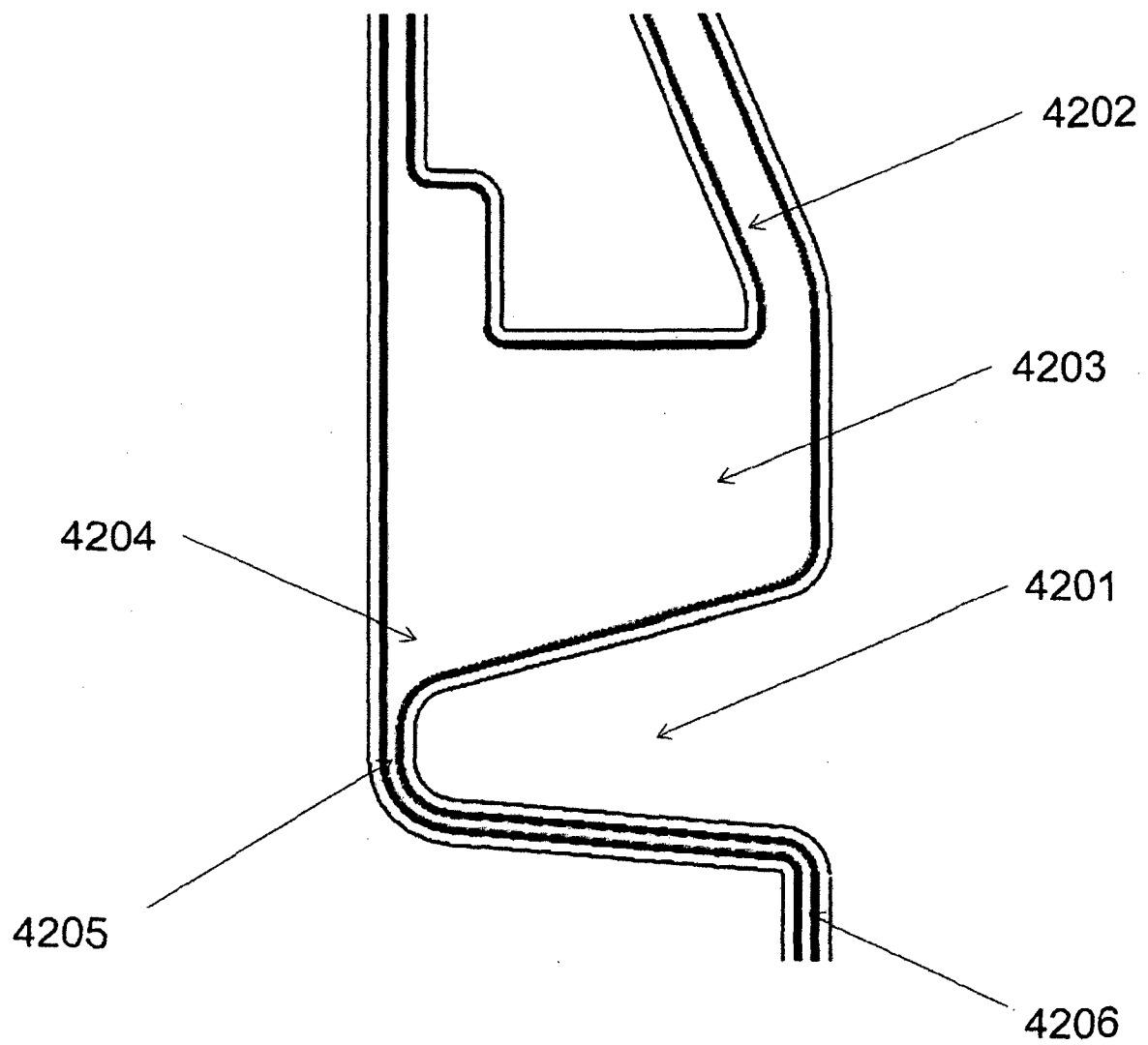


FIG. 41

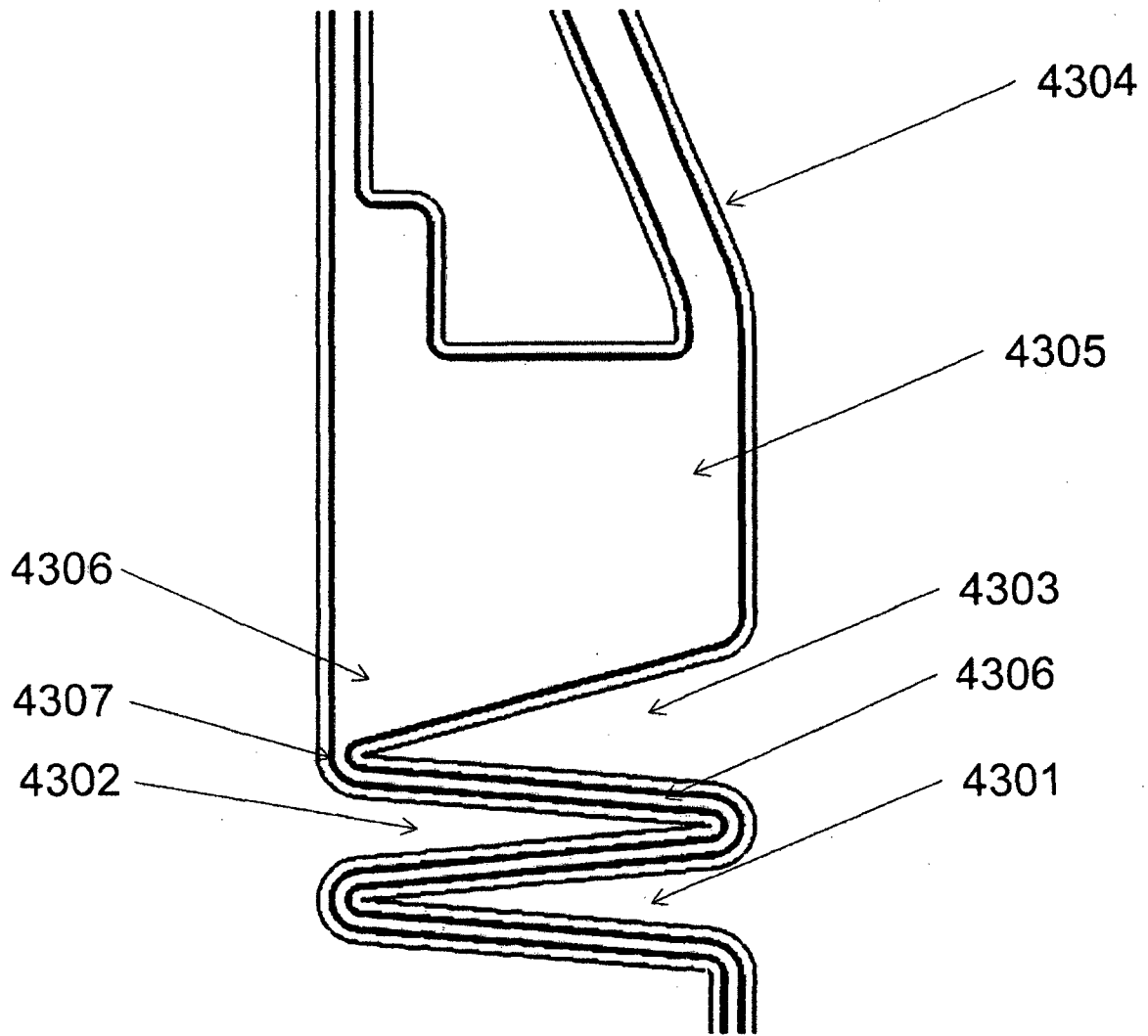


FIG. 42

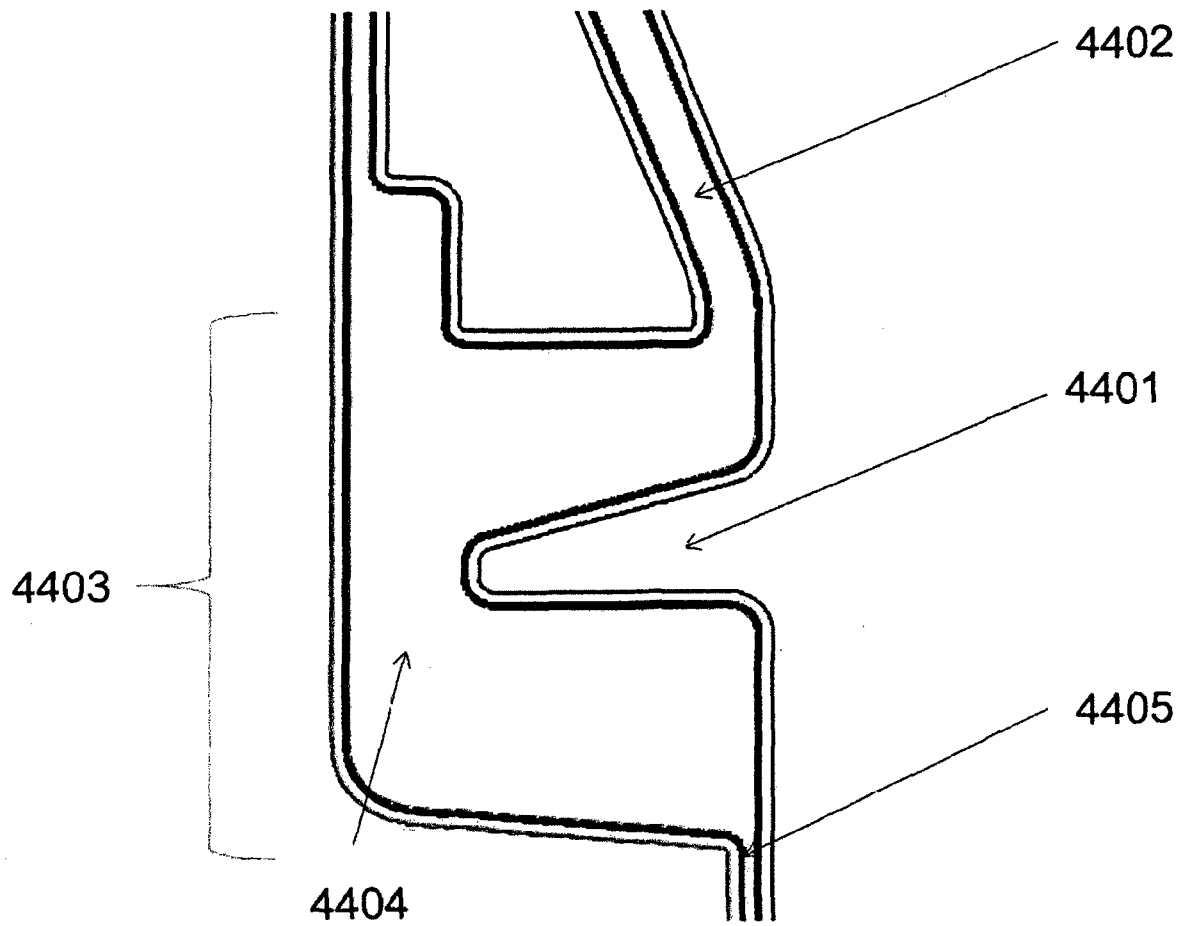
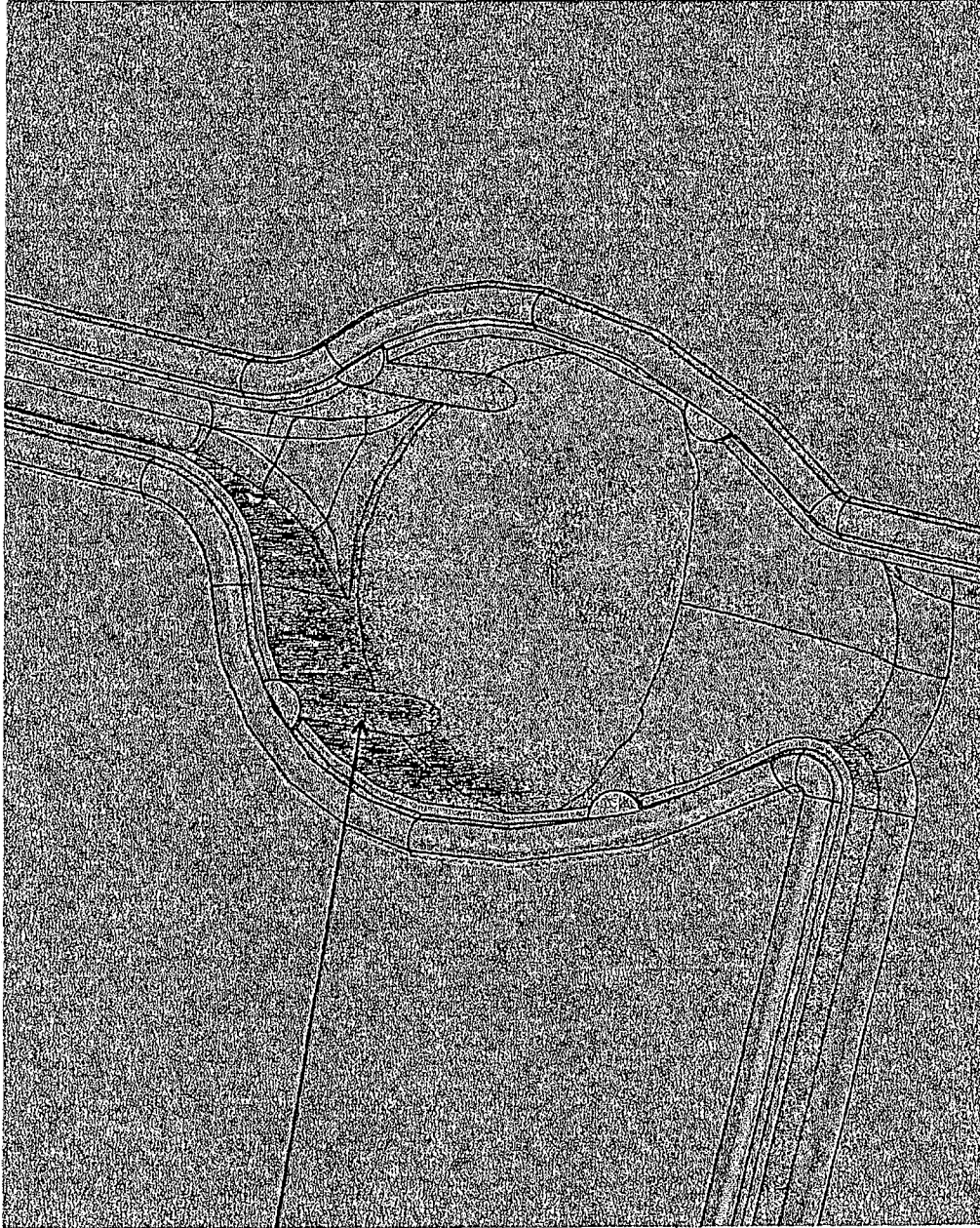
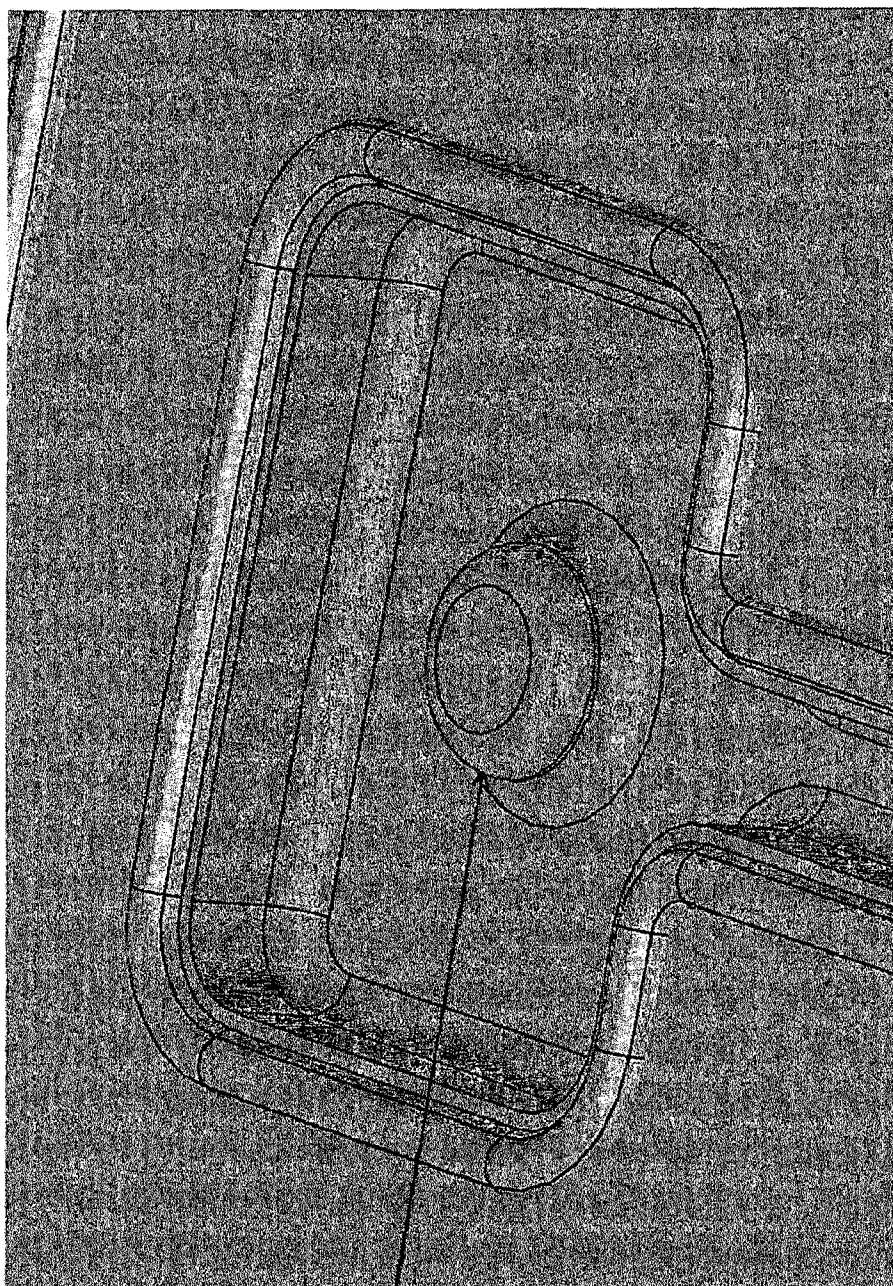


FIG. 43



7001

FIG. 44



7004

FIG. 45