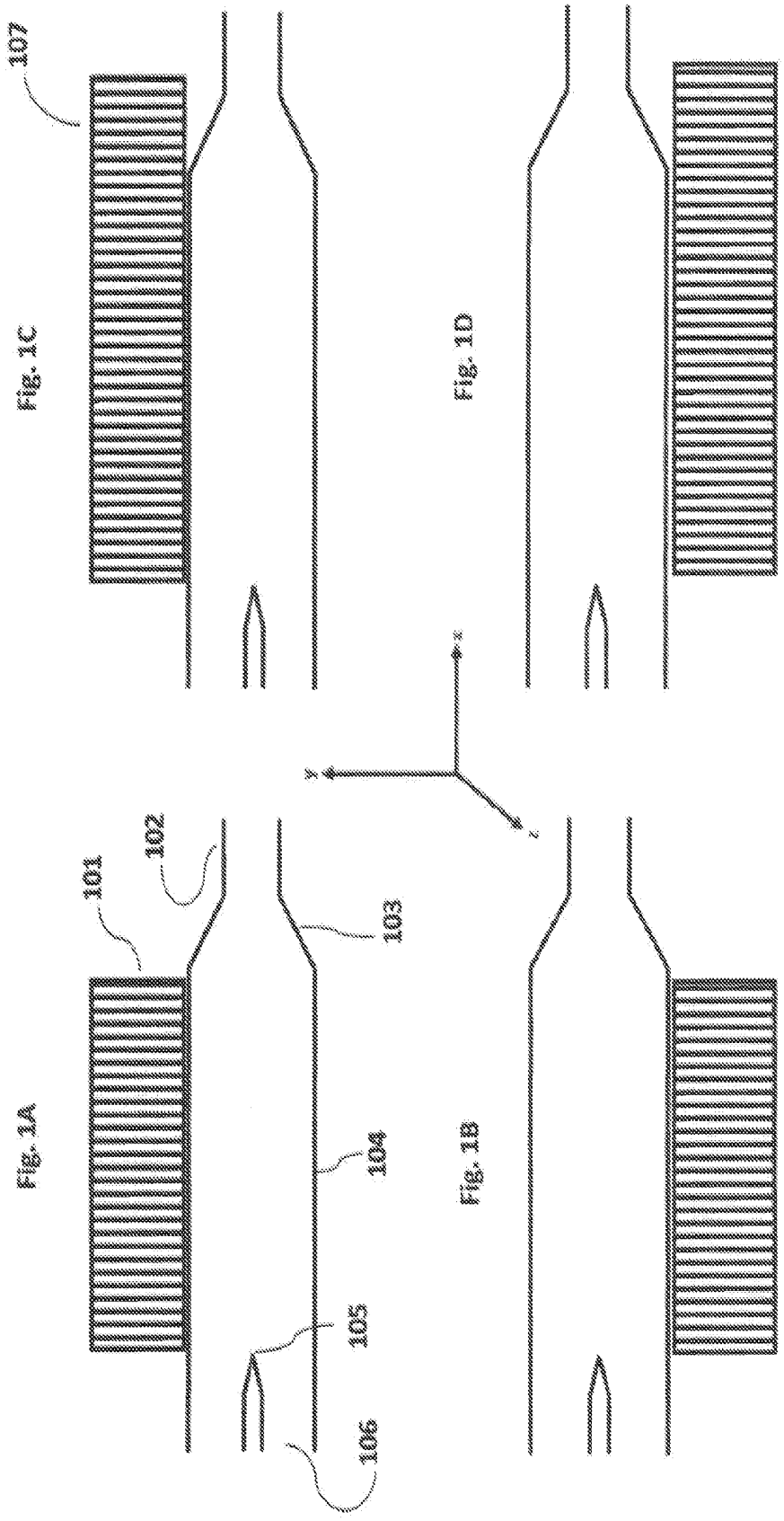
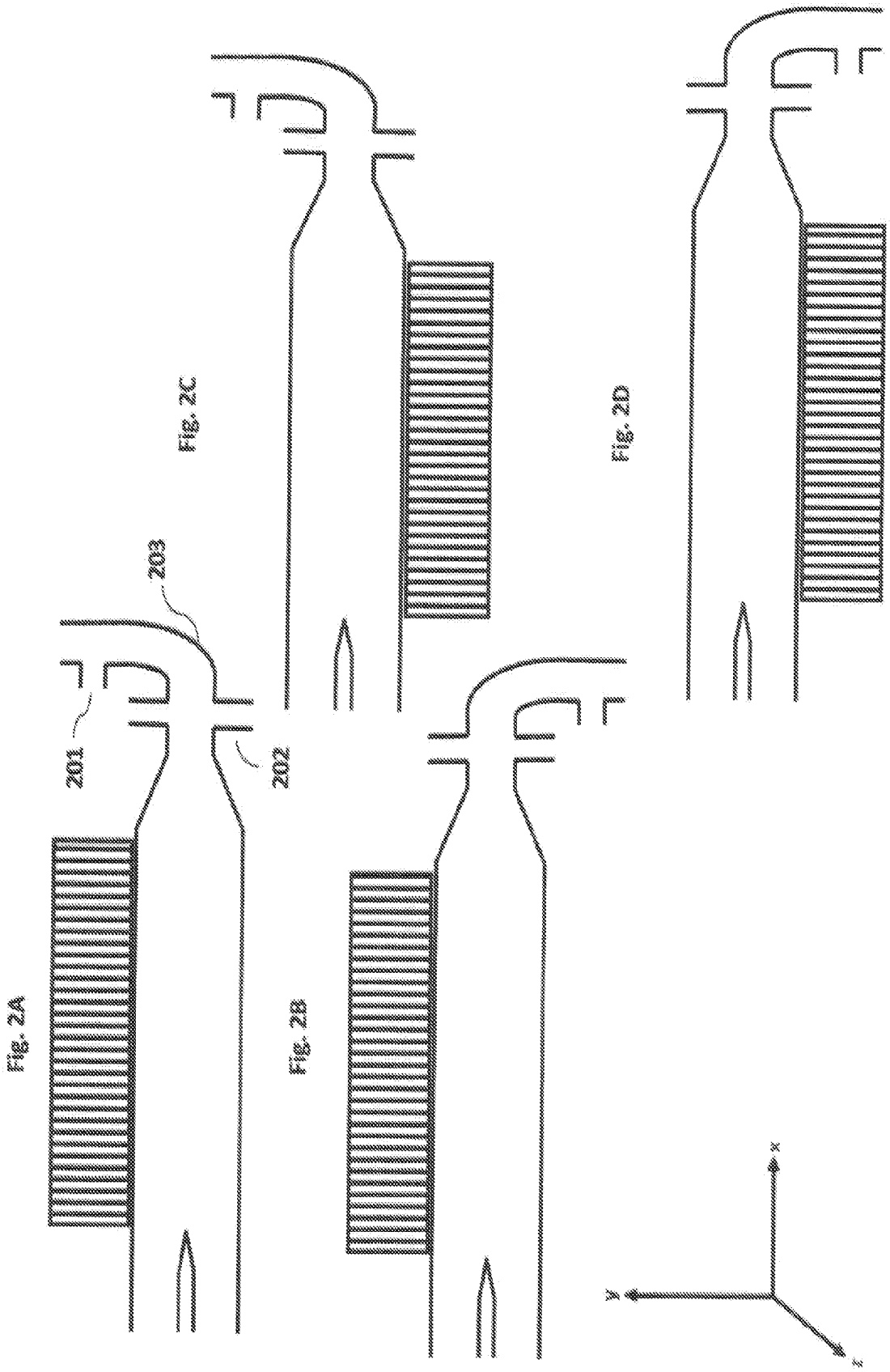

107
101
102
103
104
105
106
Fig. 1A
Fig. 1B
Fig. 1C
Fig. 1D


Fig. 2A
Fig. 2B
Fig. 2C
Fig. 2D
201
202
203
x
y
z

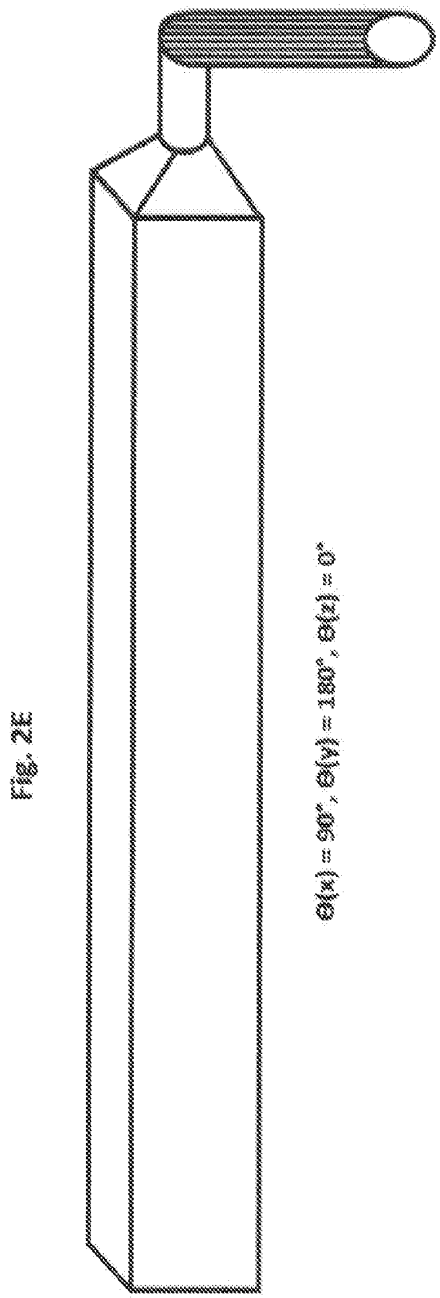


Fig. 2E

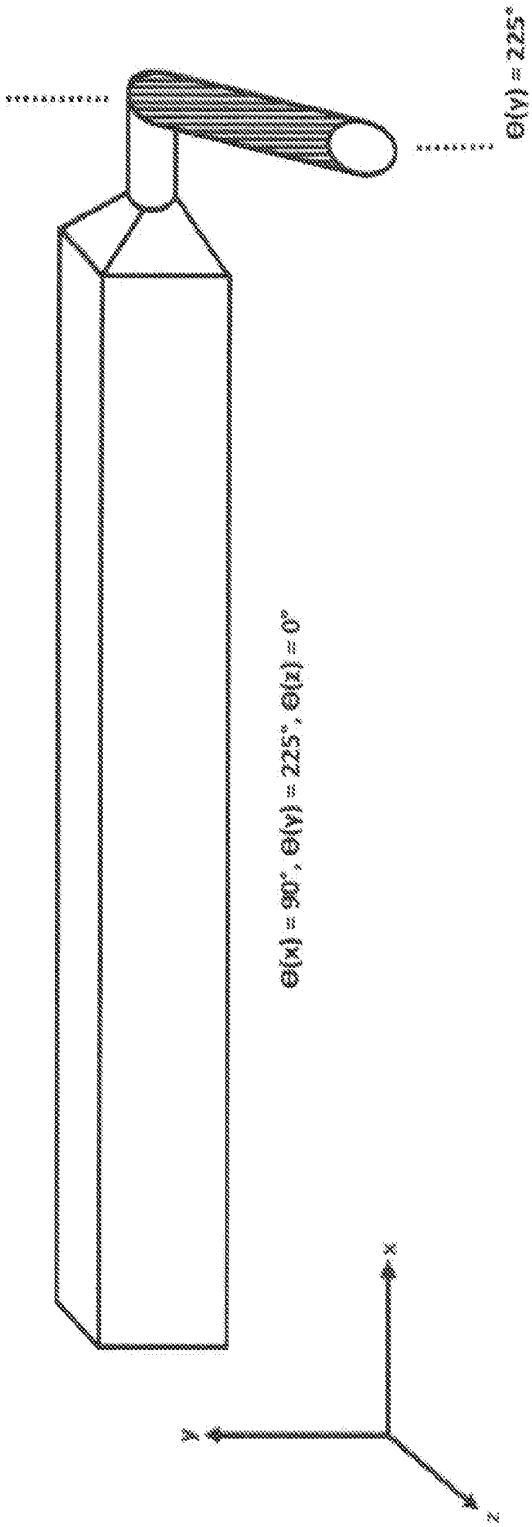


Fig. 2F

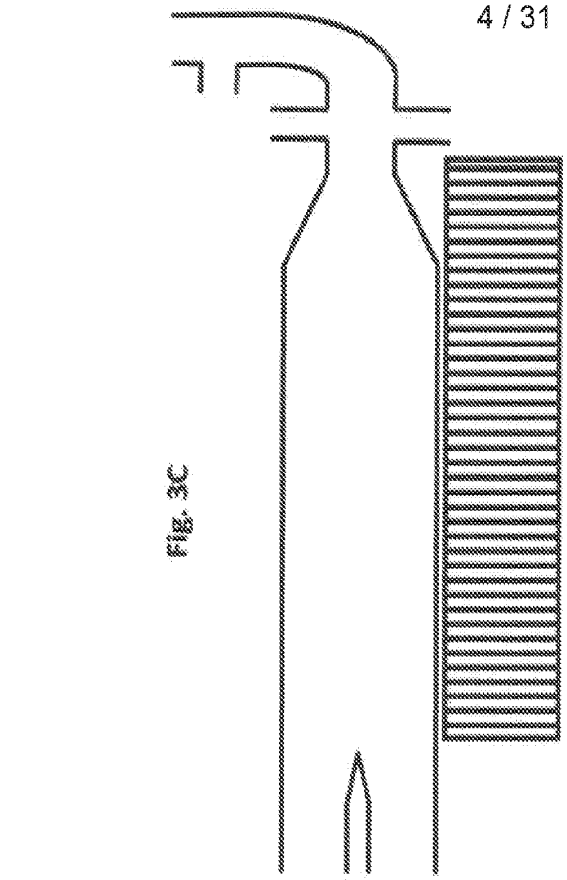


Fig. 3C

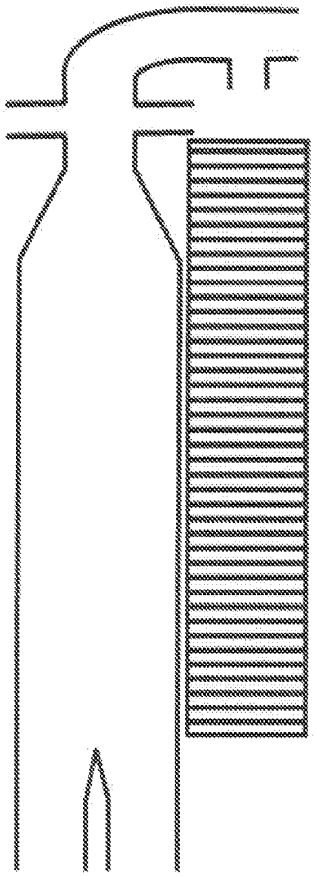


Fig. 3D

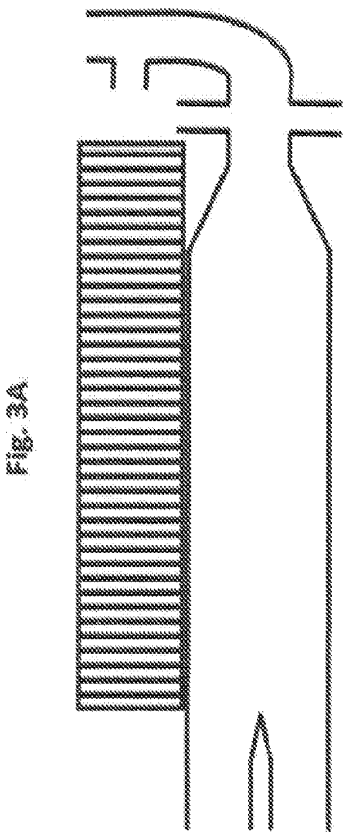


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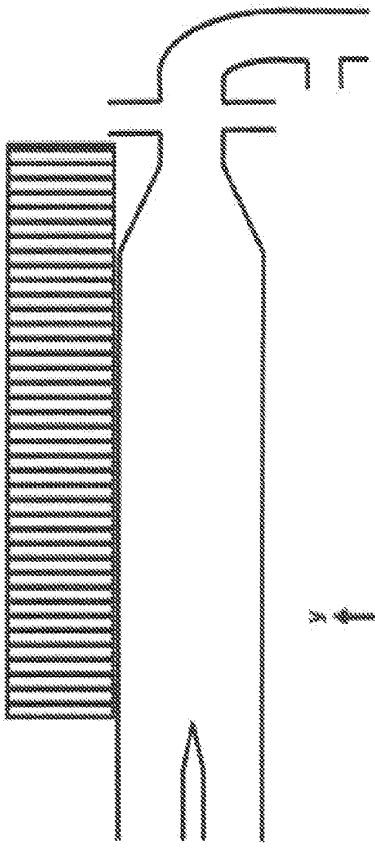
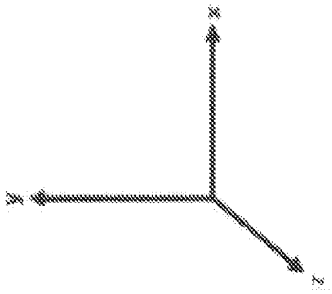


Fig. 3B



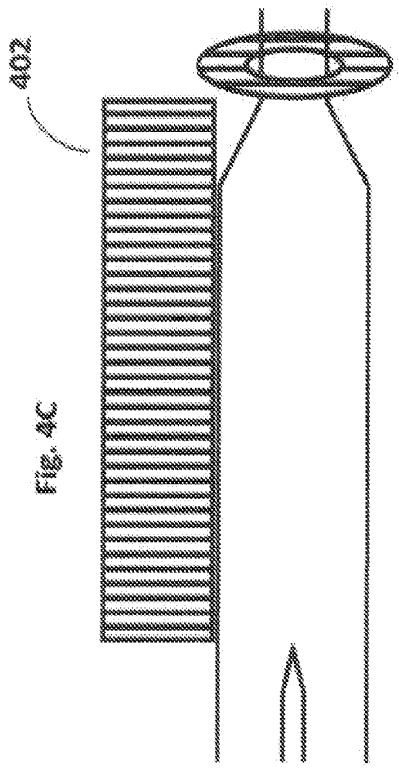


Fig. 4C

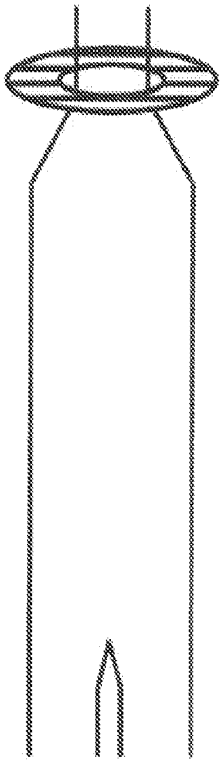
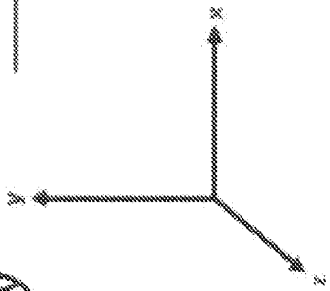


Fig. 4D



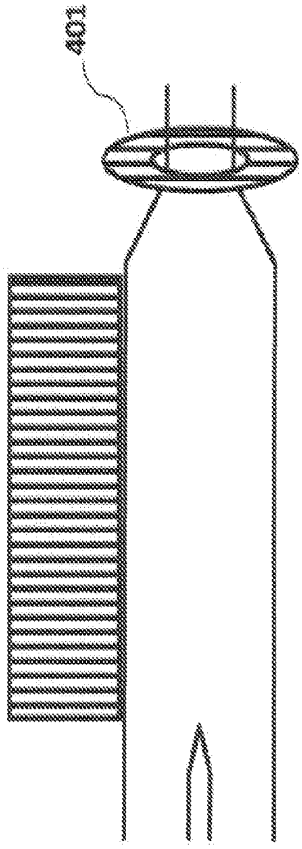


Fig. 4A

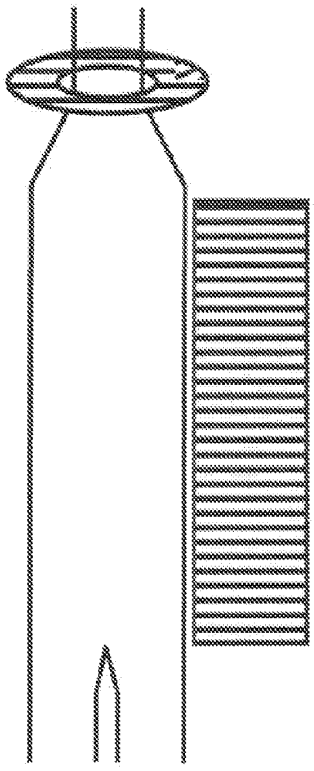


Fig. 4B

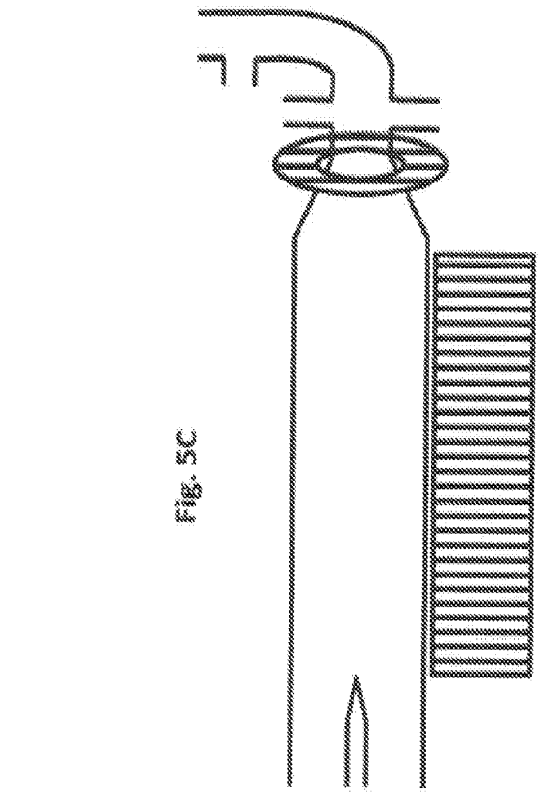


Fig. 5C

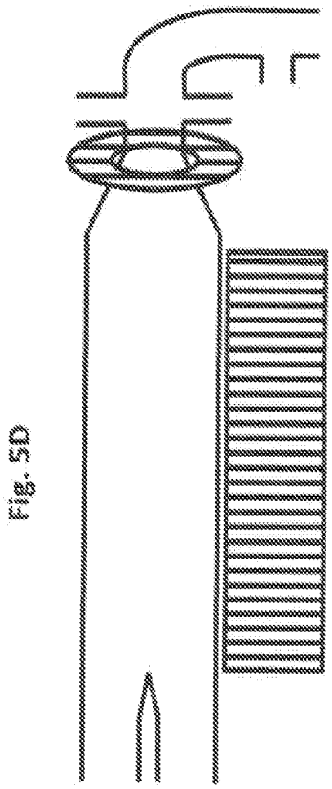


Fig. 5D

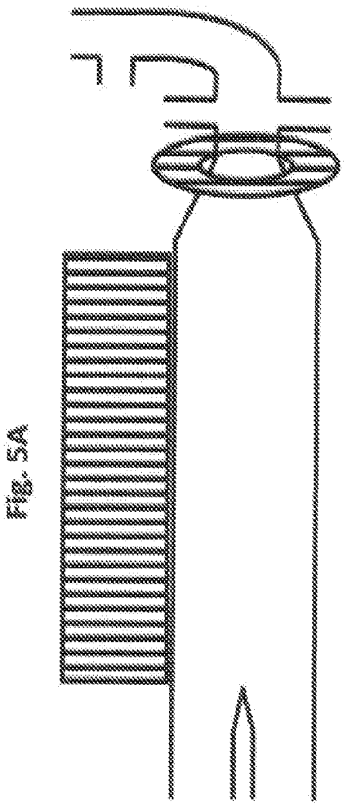


Fig. 5A

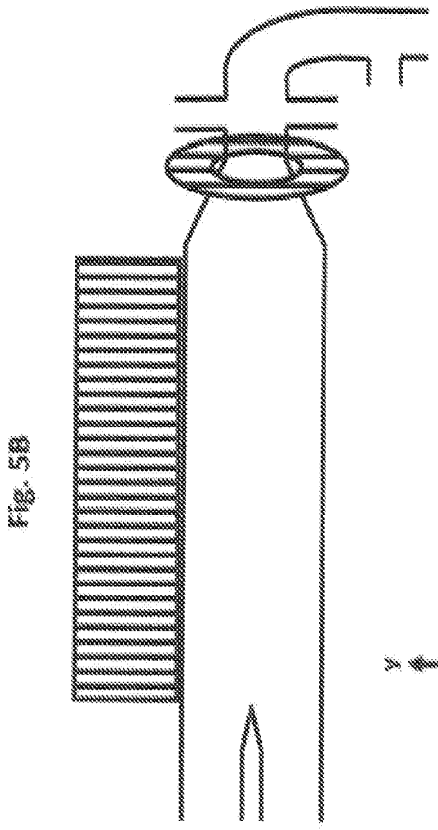


Fig. 5B

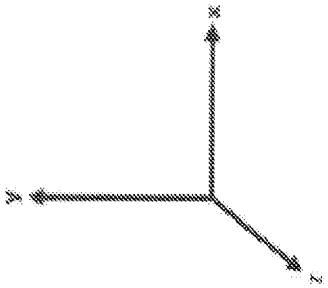
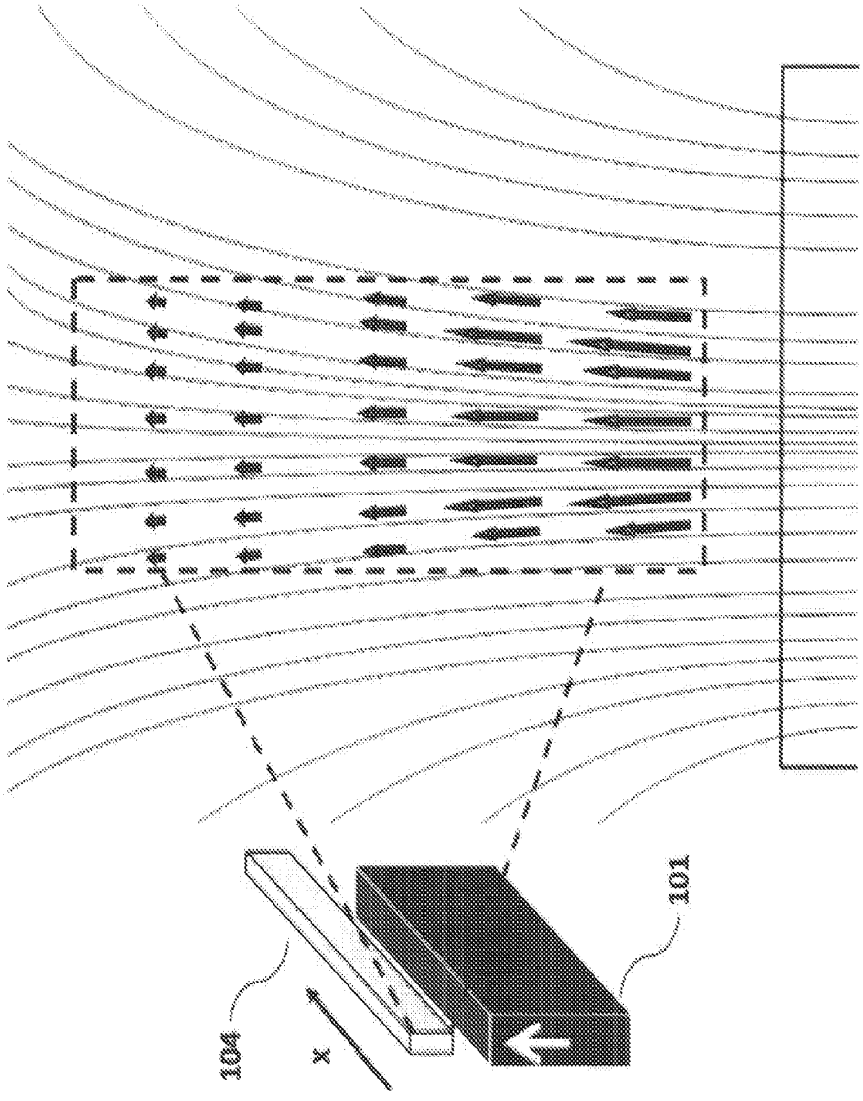
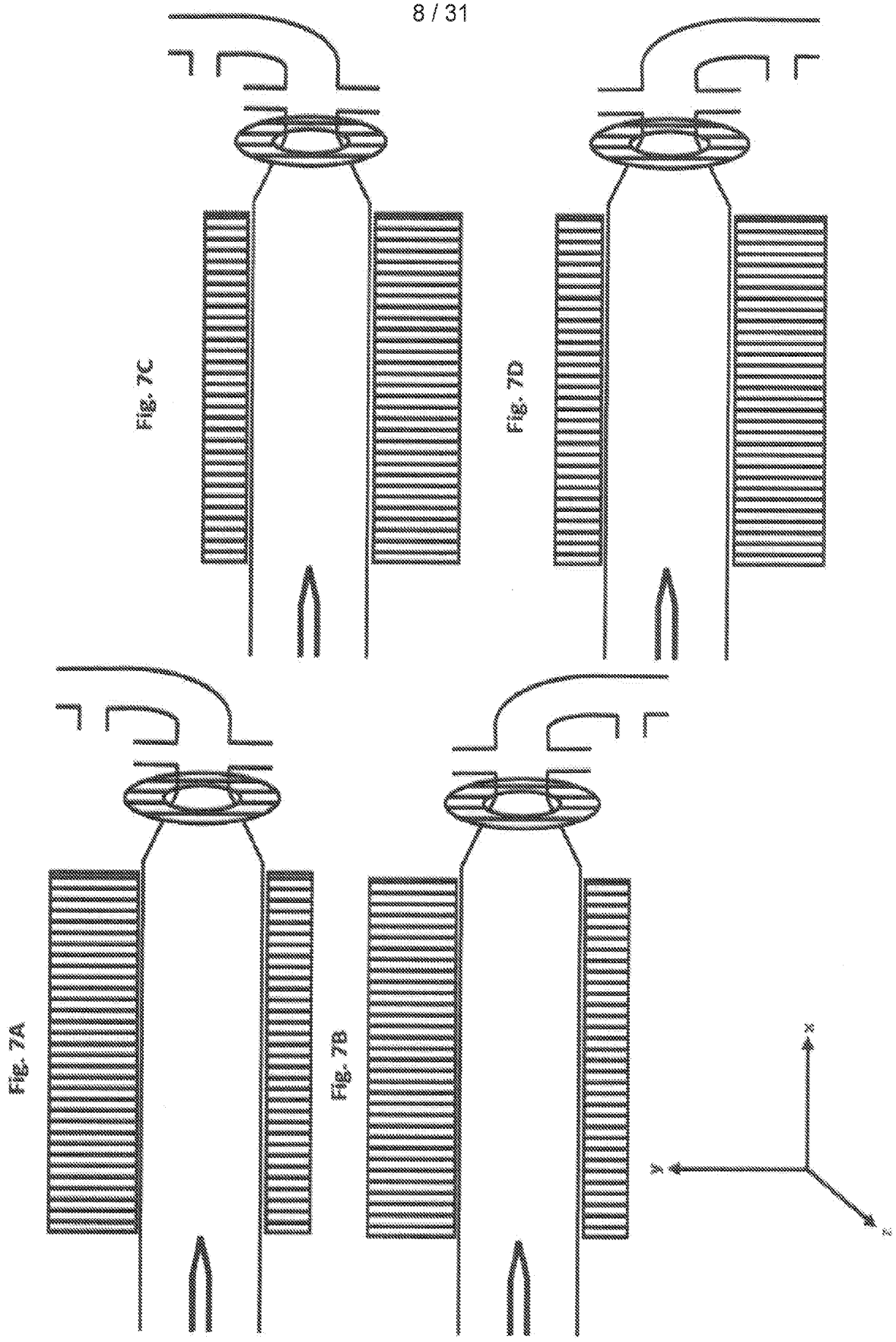
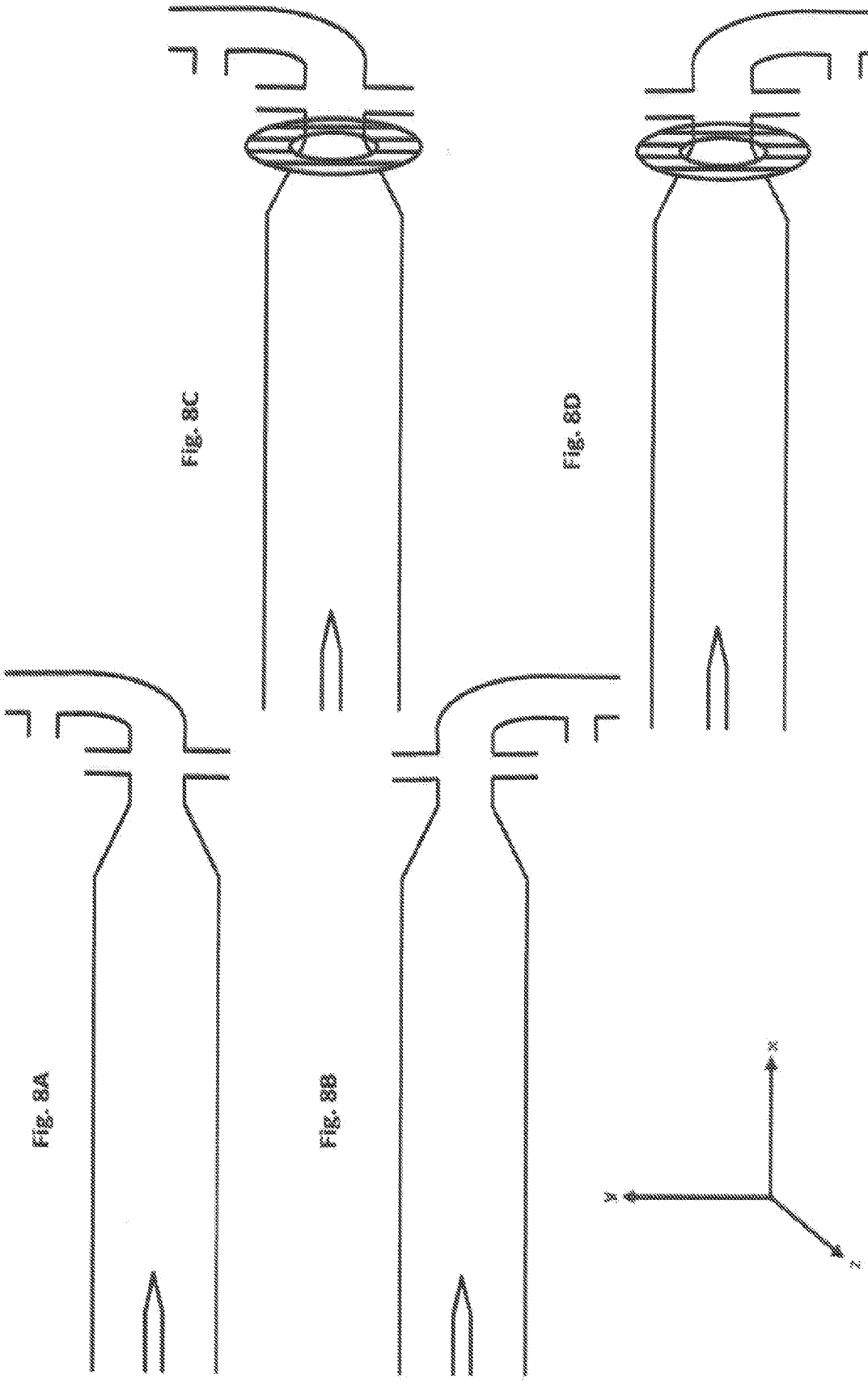


Fig. 6




Fig. 7A
Fig. 7B
Fig. 7C
Fig. 7D
x
y
z


Fig. 8C
Fig. 8D
Fig. 8A
Fig. 8B
x
y
z

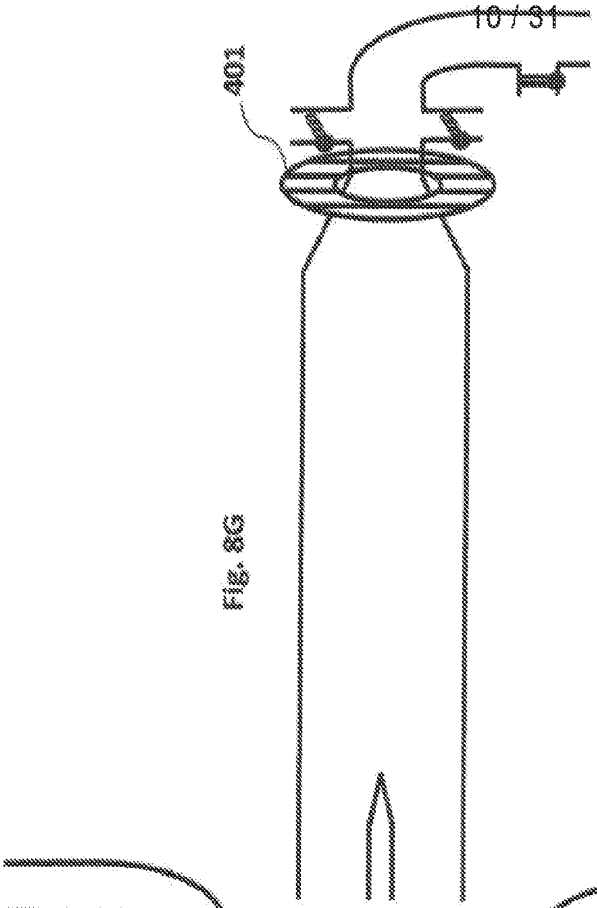


Fig. 8G

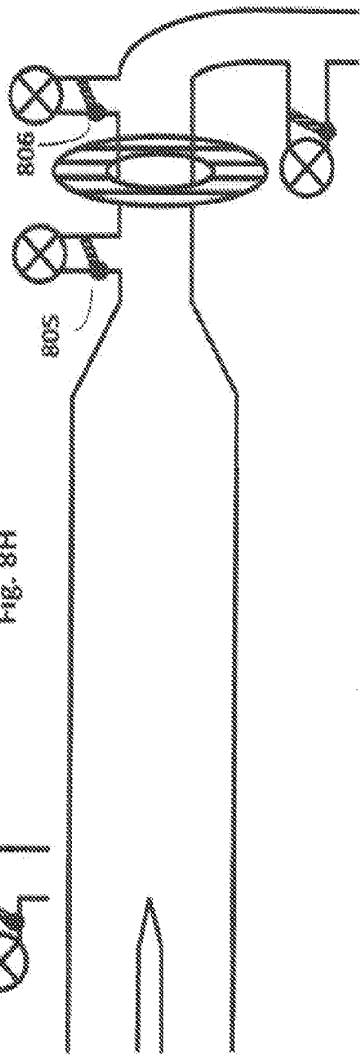


Fig. 8H

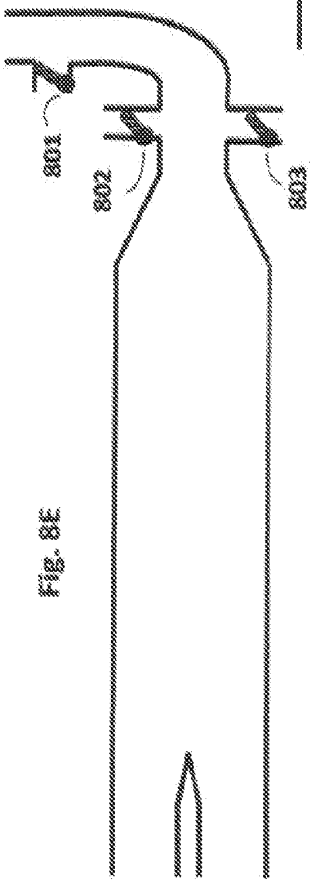


Fig. 8E

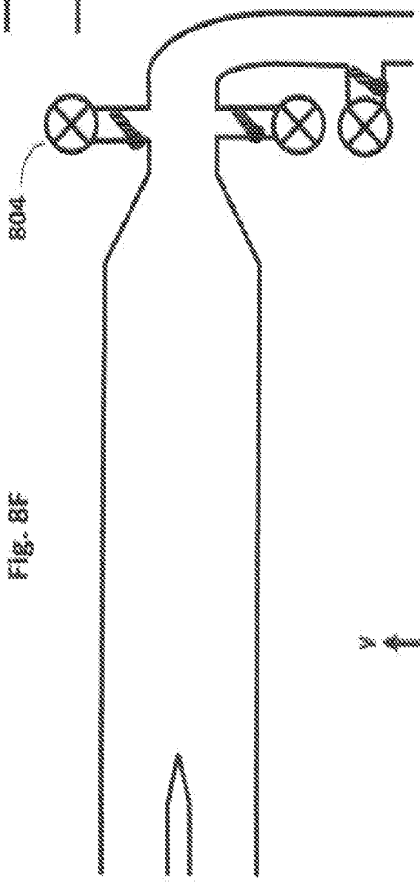
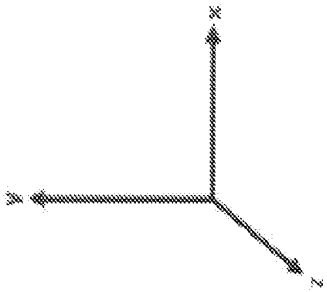


Fig. 8F



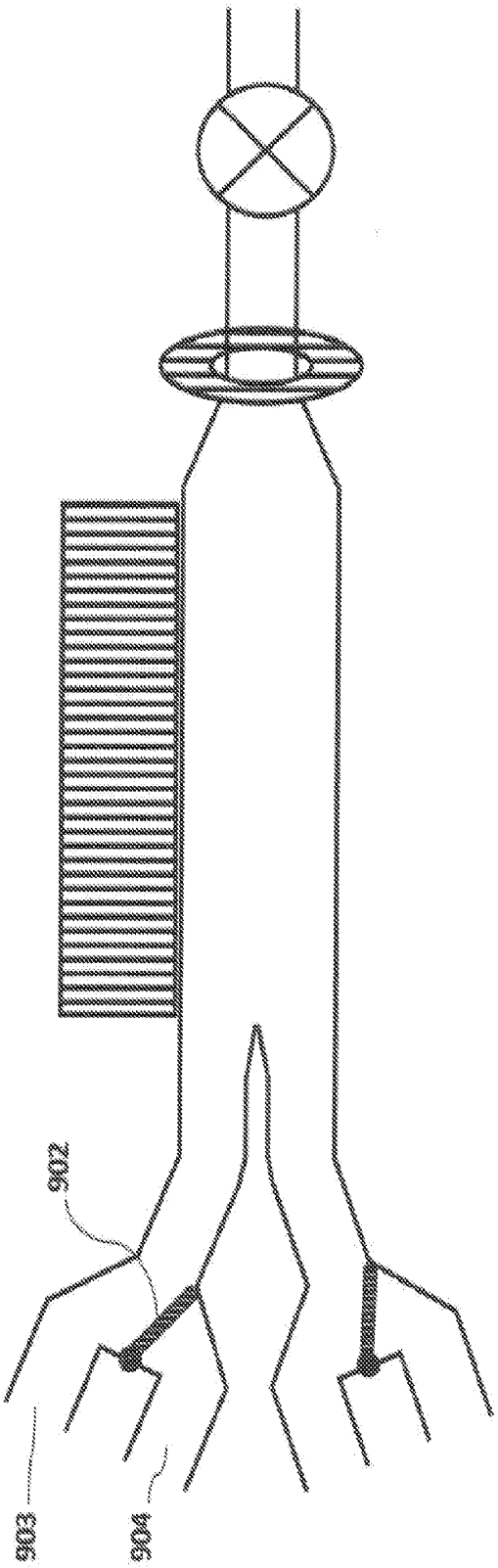


Fig. 9A

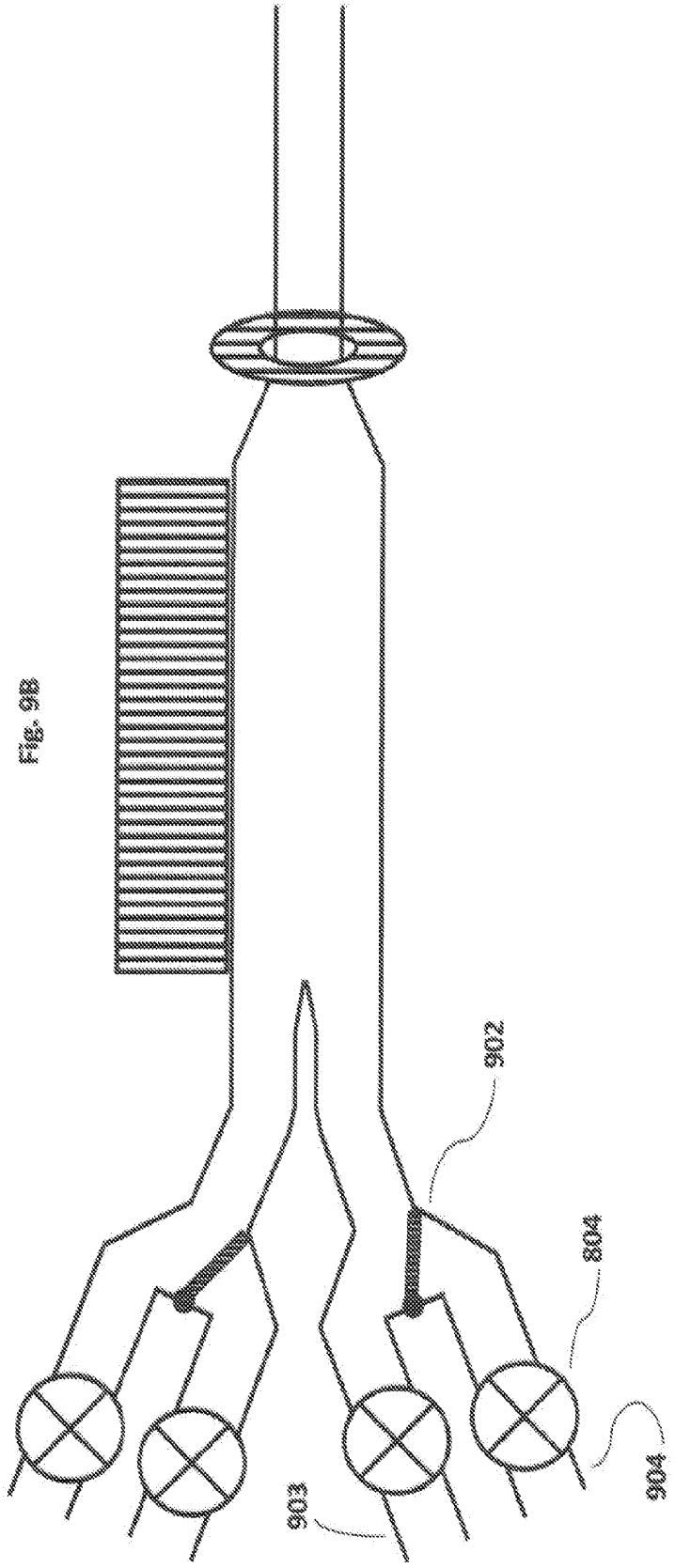


Fig. 9B

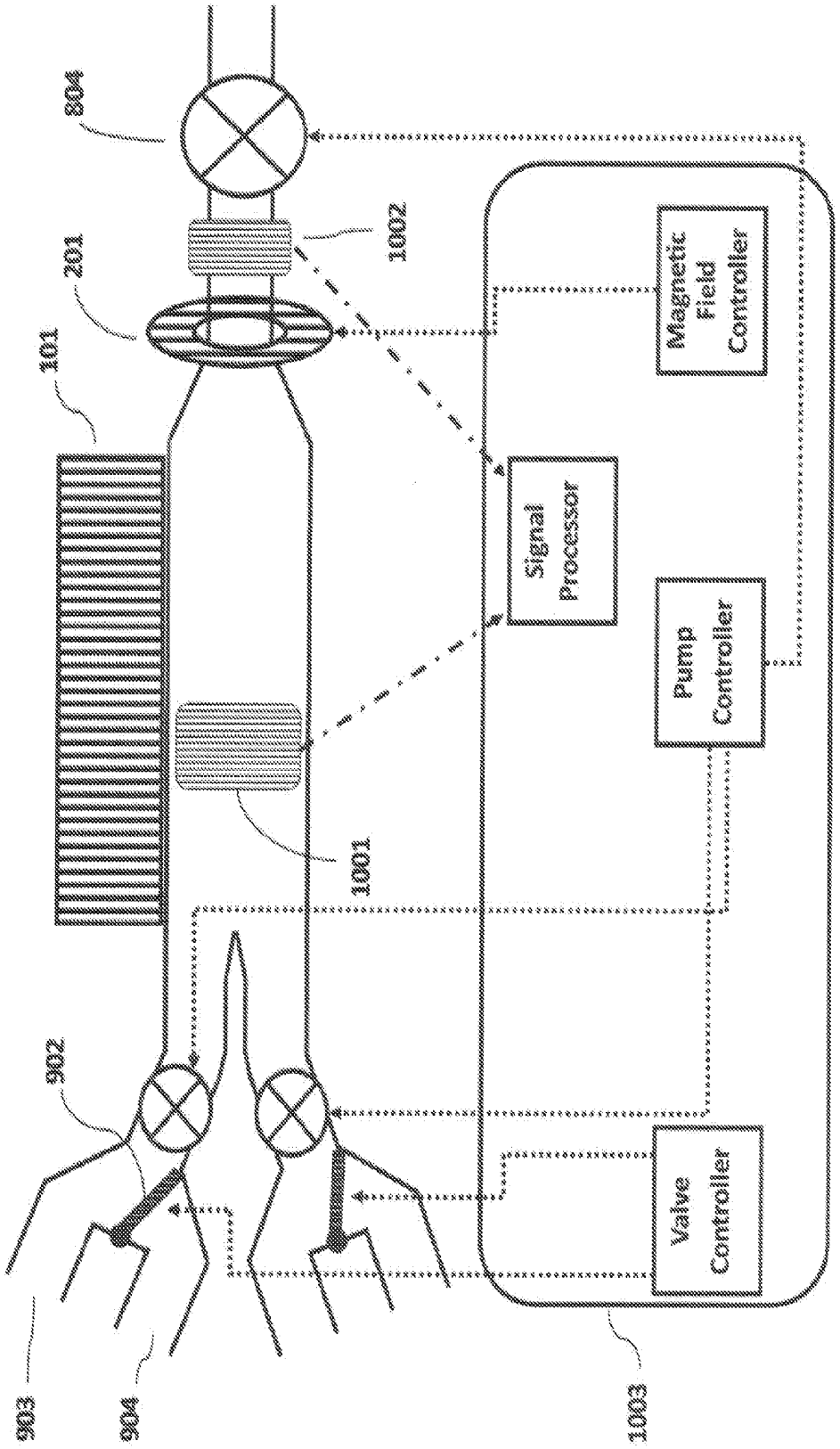
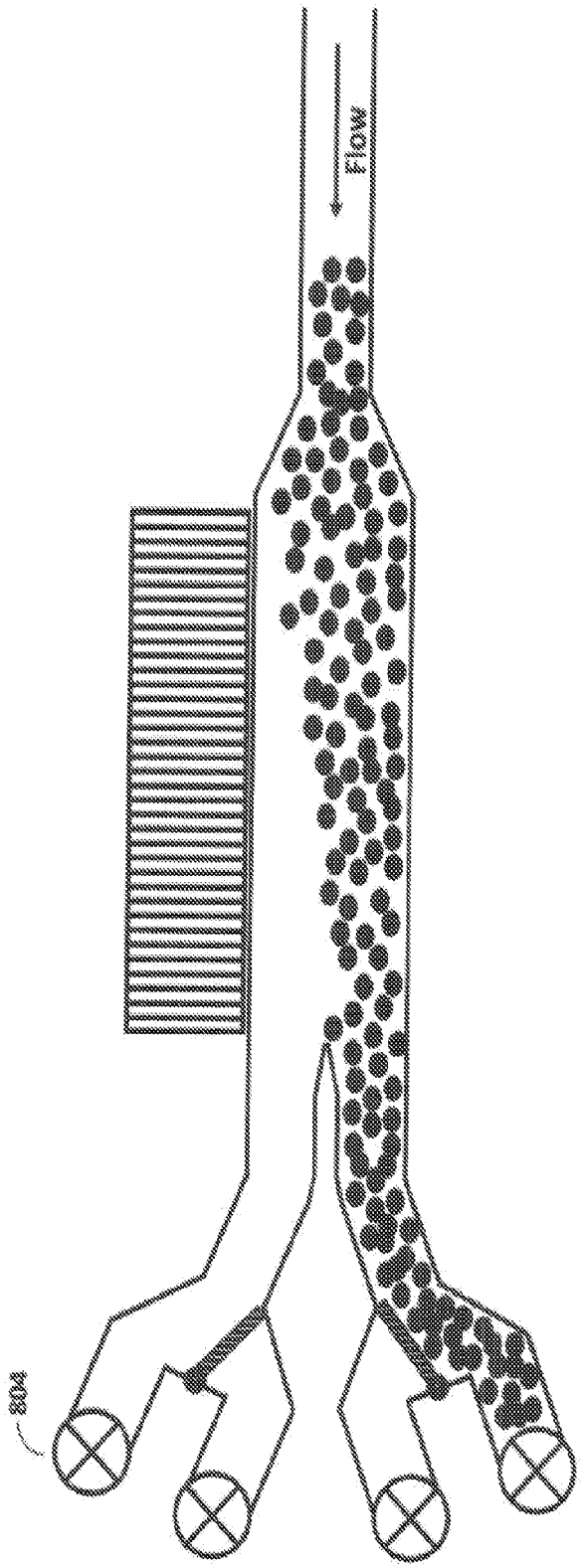

904
1002
201
101
Magnetic Field Controller
Signal Processor
Pump Controller
1001
902
Valve Controller
903
904
1003

Fig. 10

Fig. 11



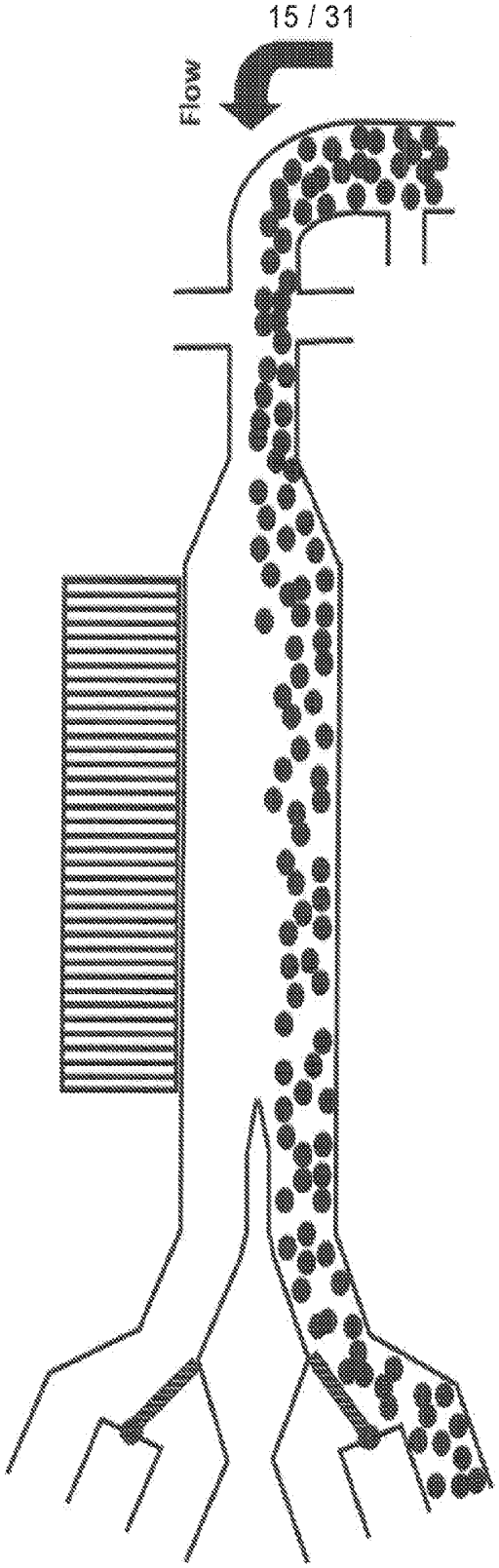


Fig. 12

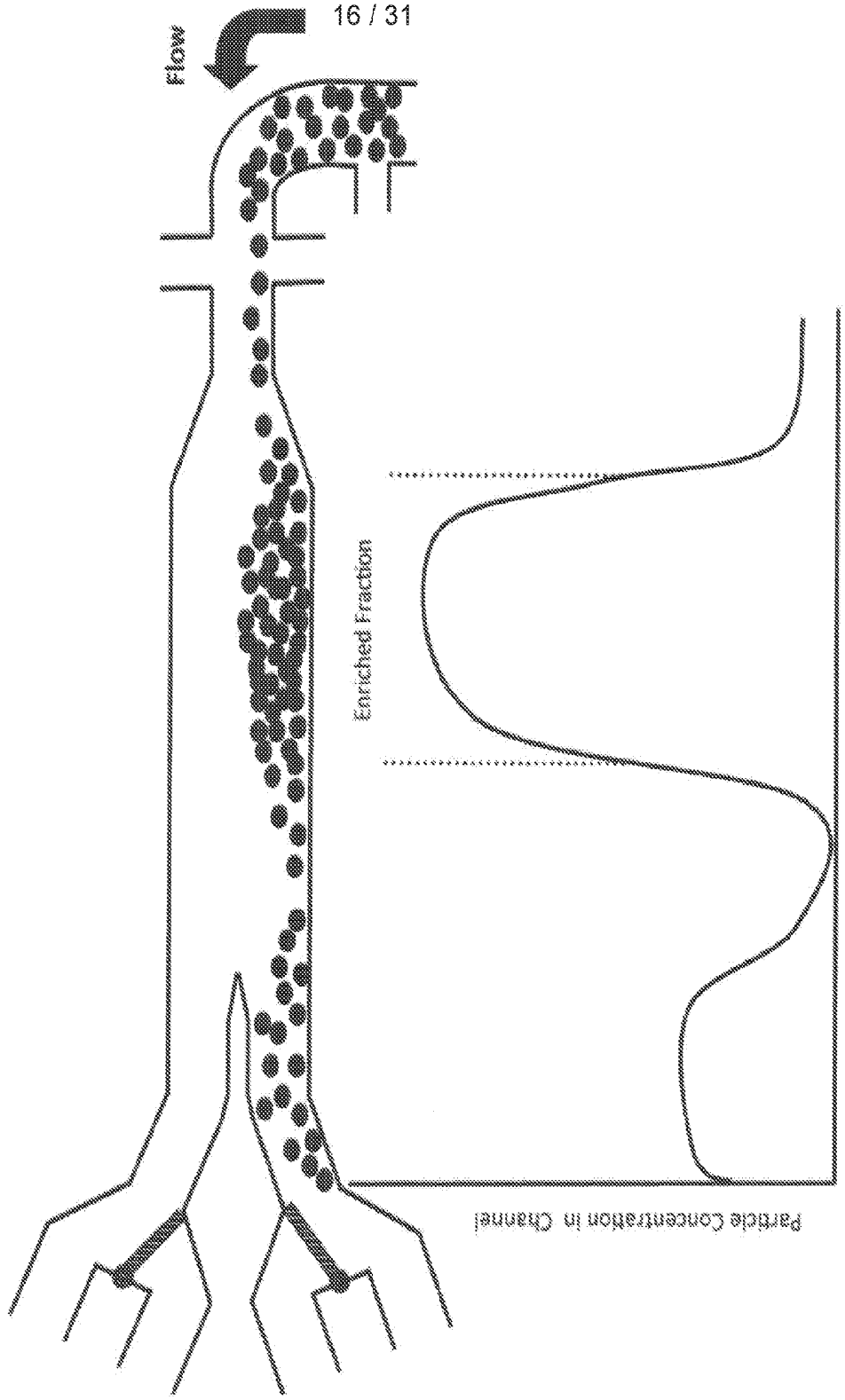

Flow
Enriched Fraction
Particle Concentration in Channel

Fig. 13

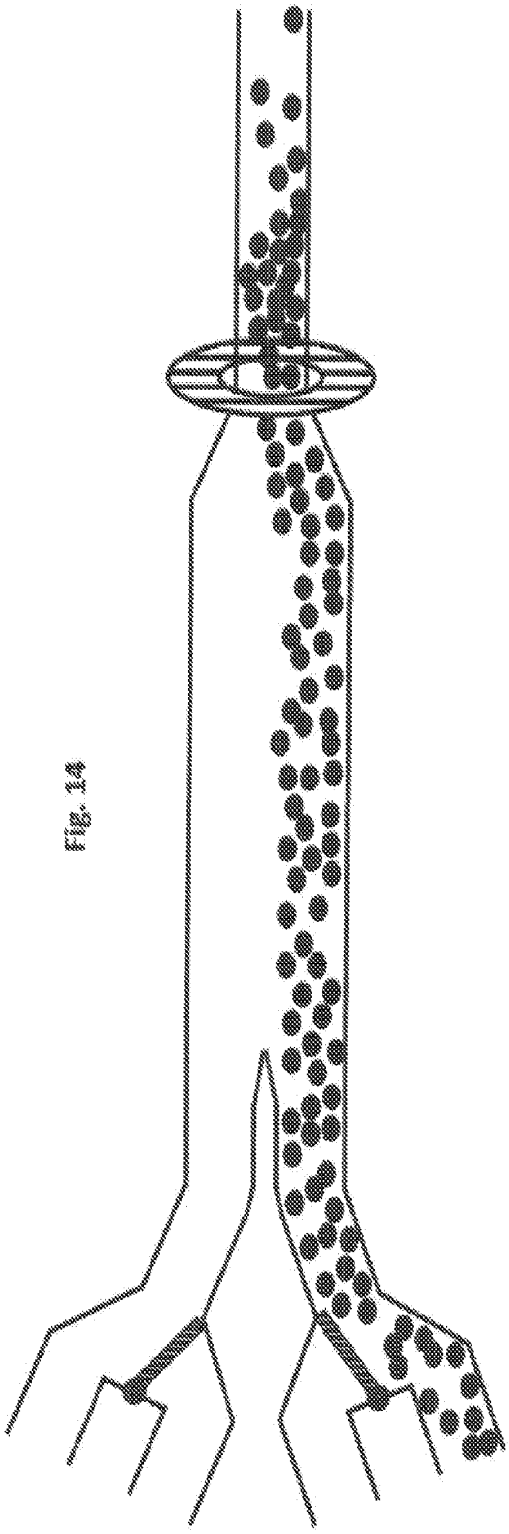


Fig. 14

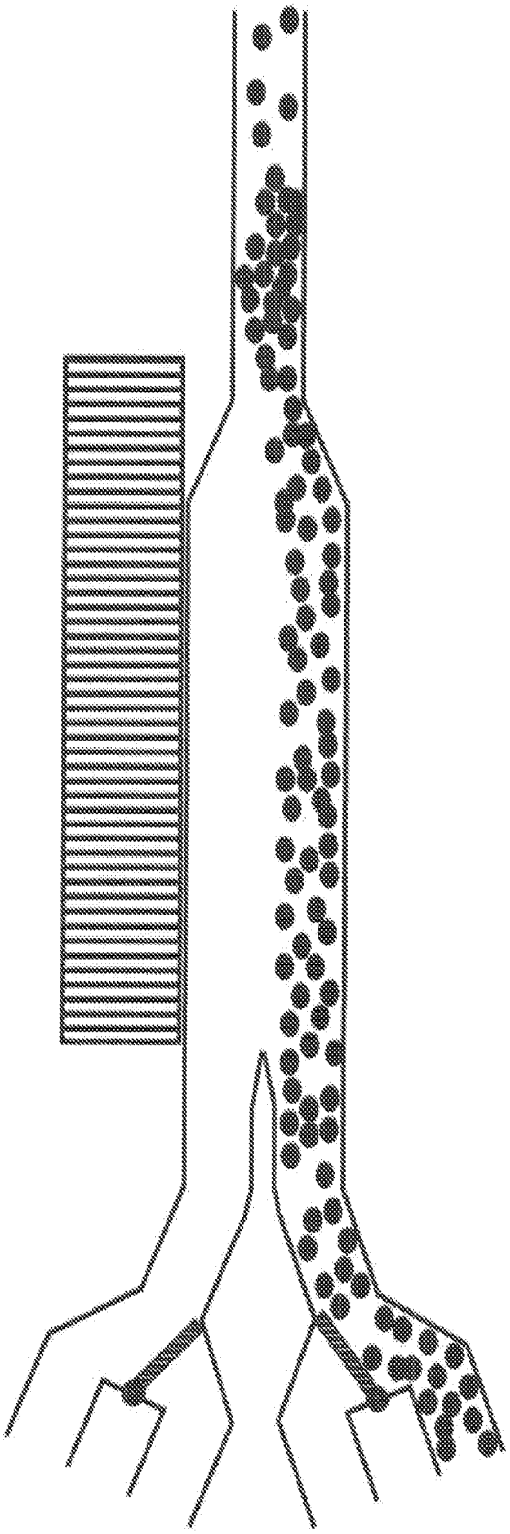


Fig. 15

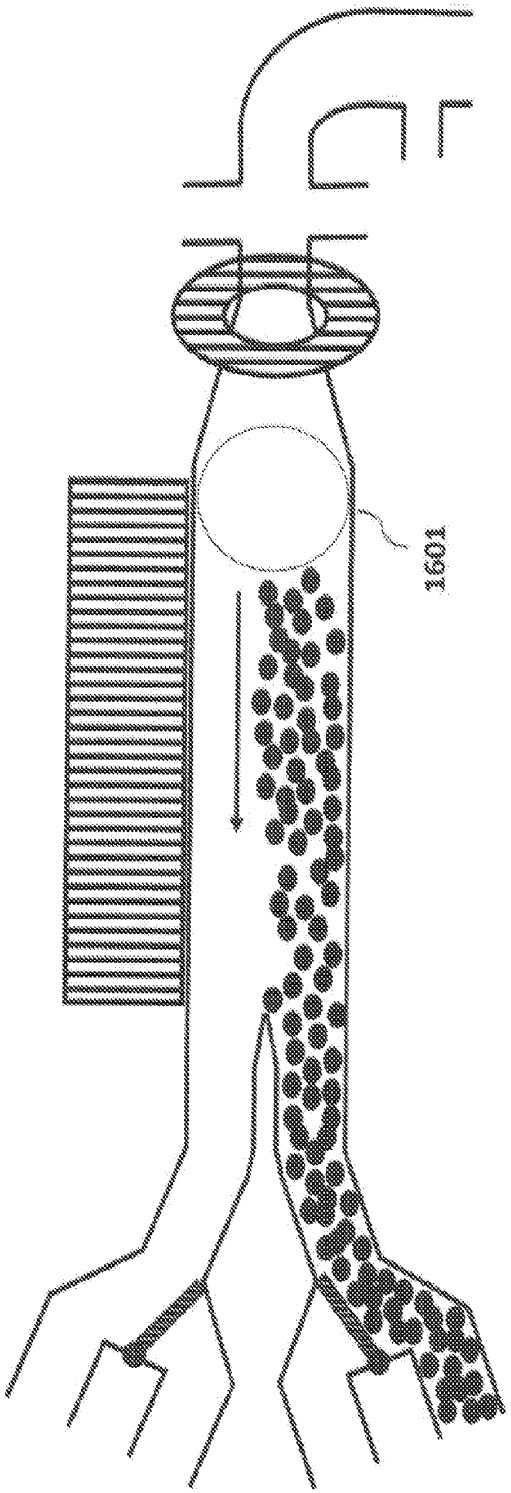
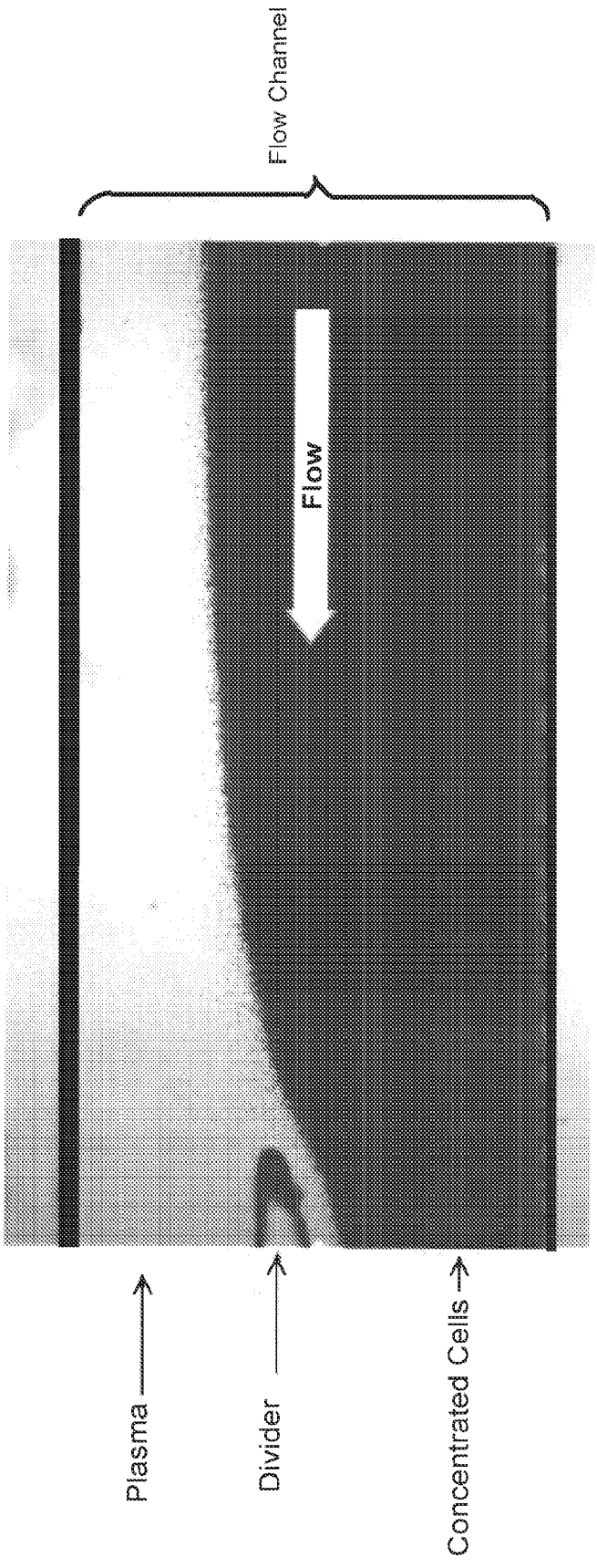


Fig. 16

Fig. 17



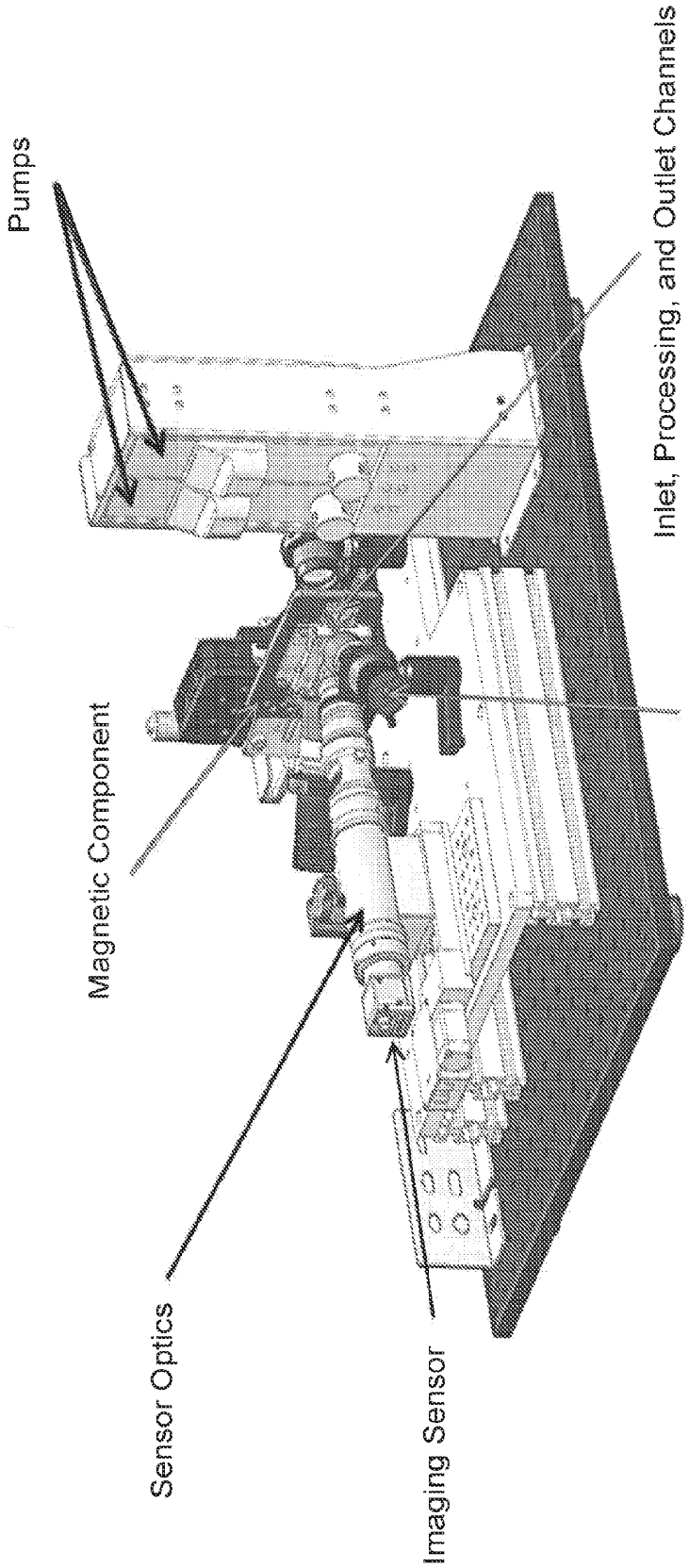

Pumps
Inlet, Processing, and Outlet Channels
Sensor Illuminator
Magnetic Component
Sensor Optics
Imaging Sensor

Fig. 18

Fig. 19A

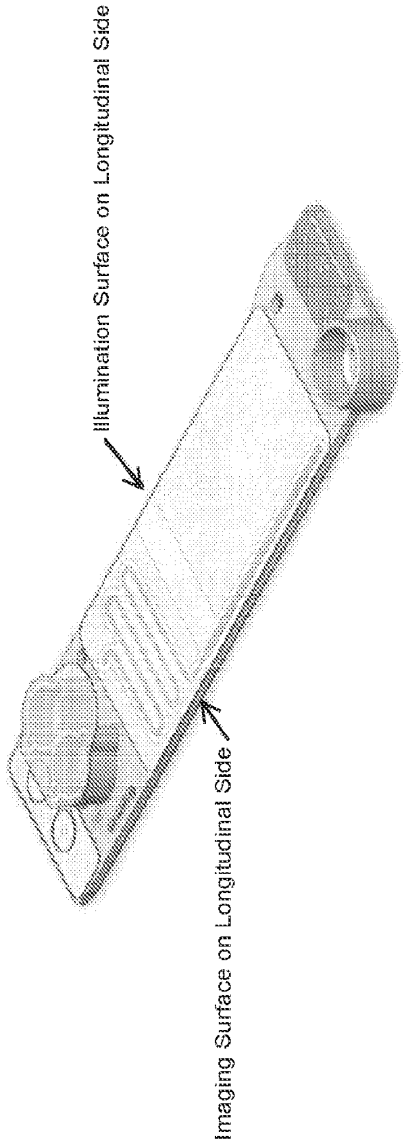


Fig. 19B

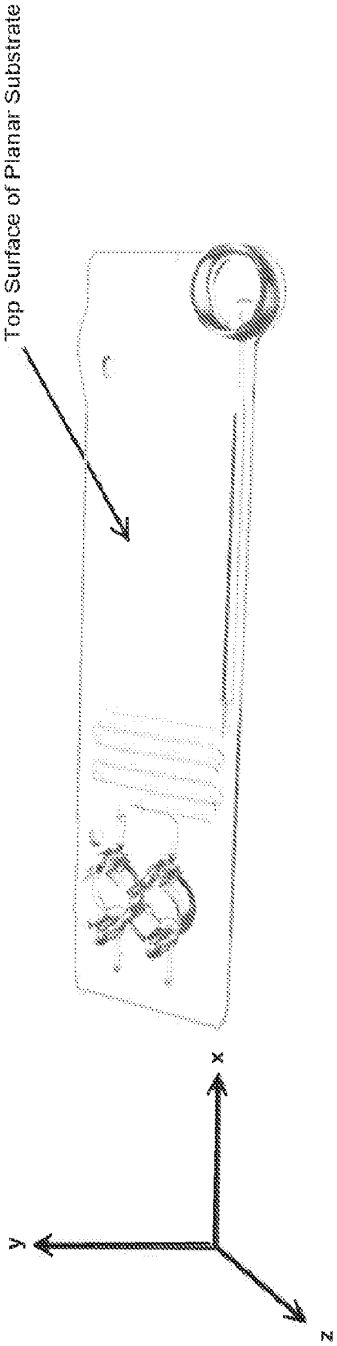


Fig. 20B

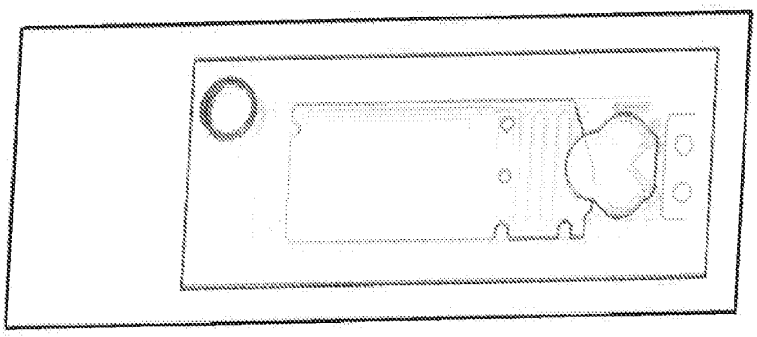


Fig. 20A

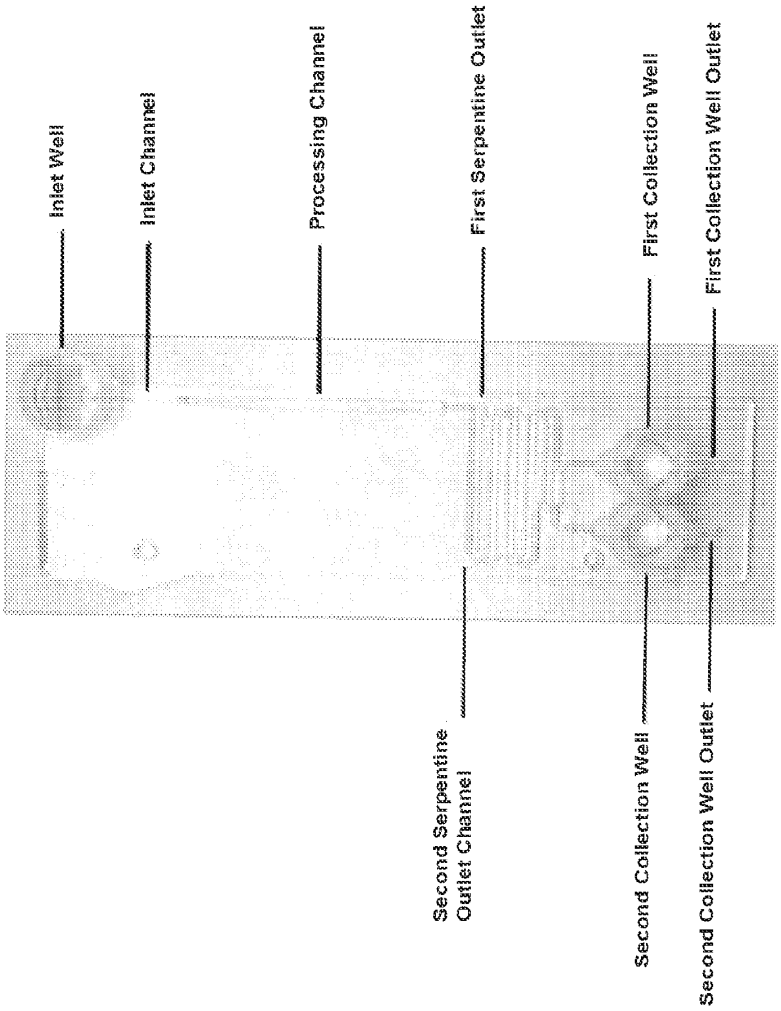


Fig. 21B

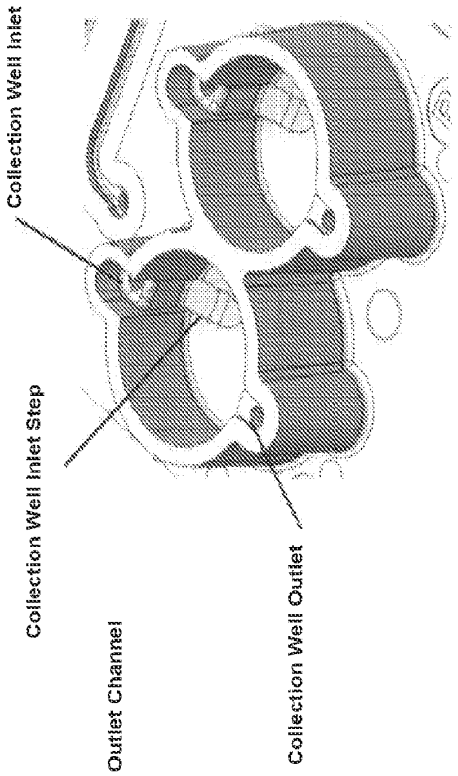


Fig. 21A

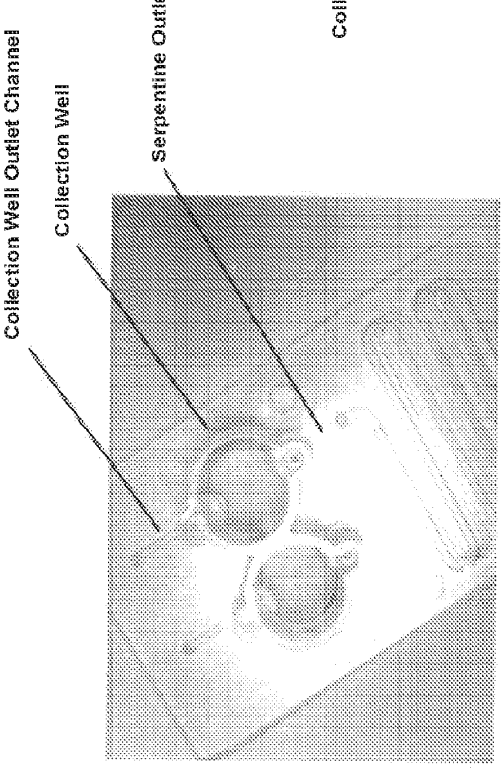


Fig. 22B

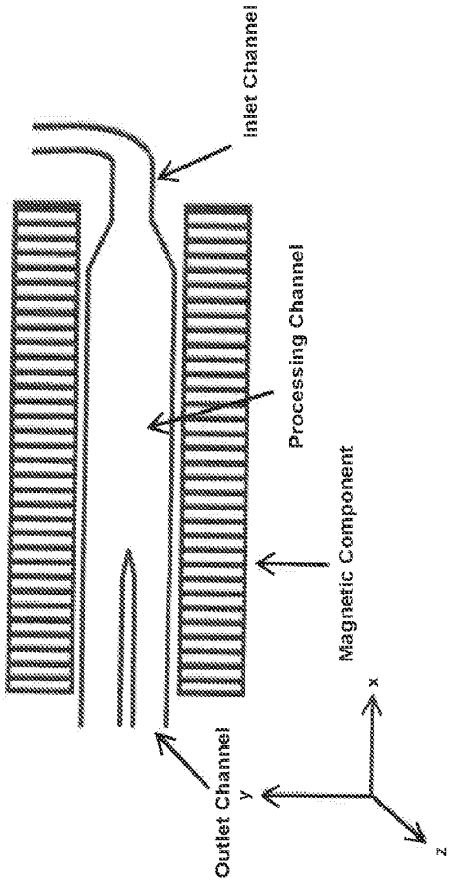


Fig. 22A

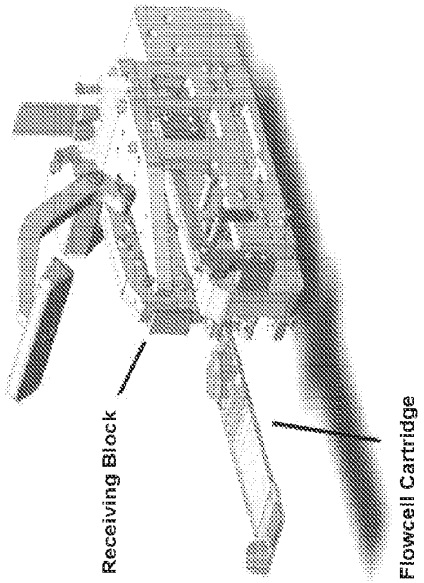
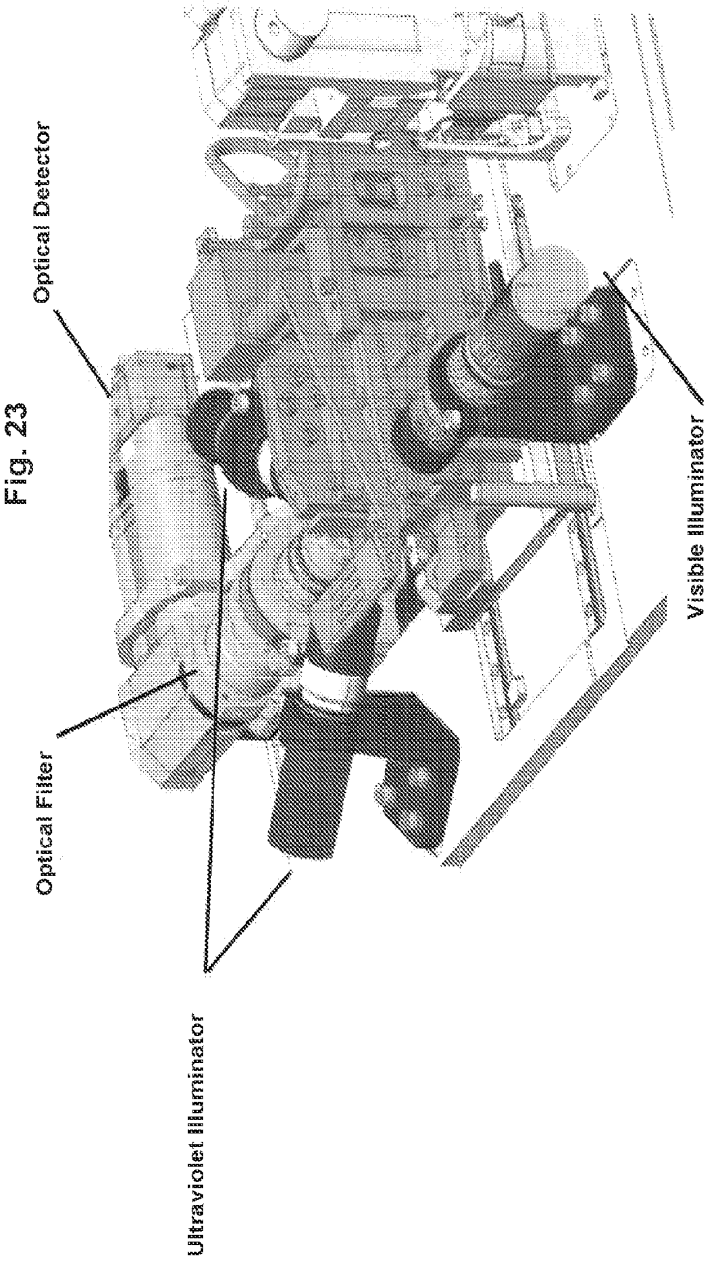


Fig. 23


Optical Detector
Visible Illuminator
Optical Filter
Ultraviolet Illuminator

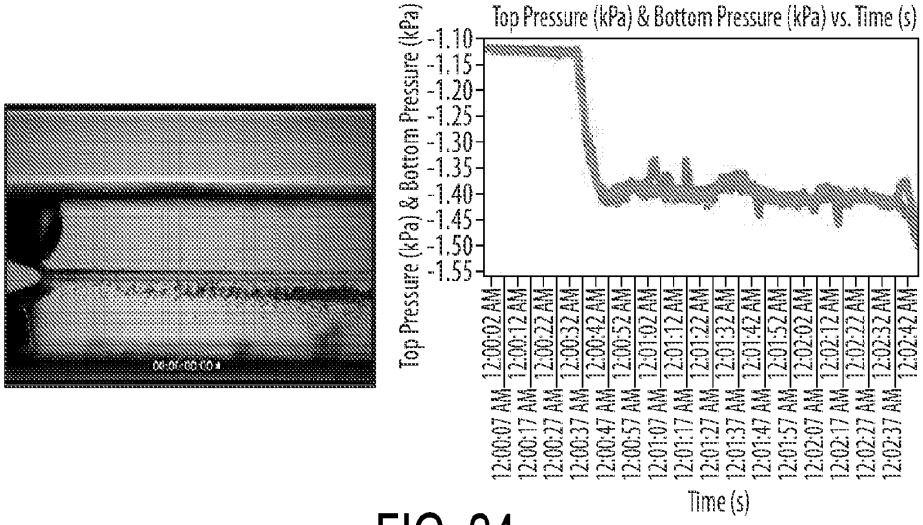


FIG. 24

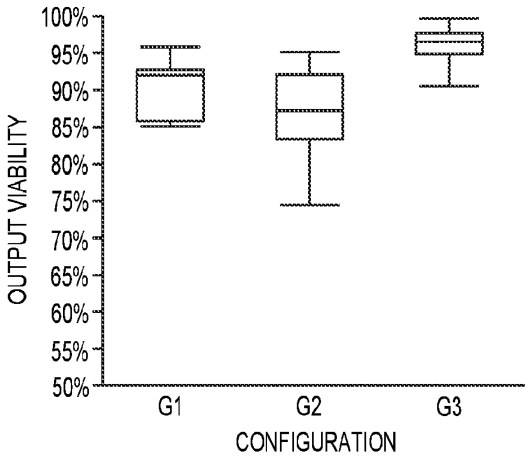


FIG. 25A

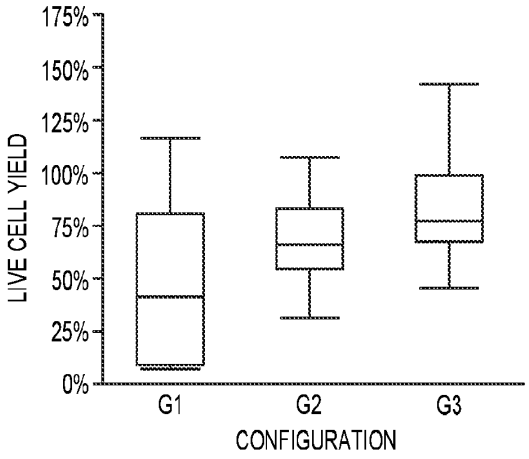


FIG. 25B

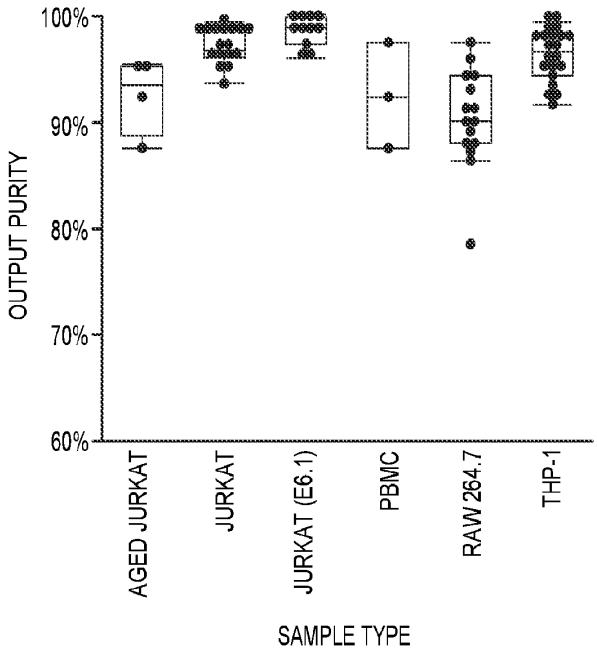


FIG. 26A

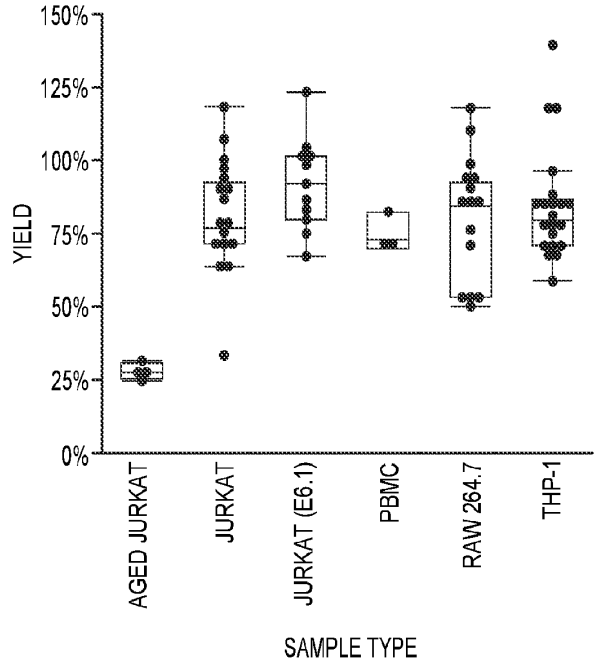


FIG. 26B

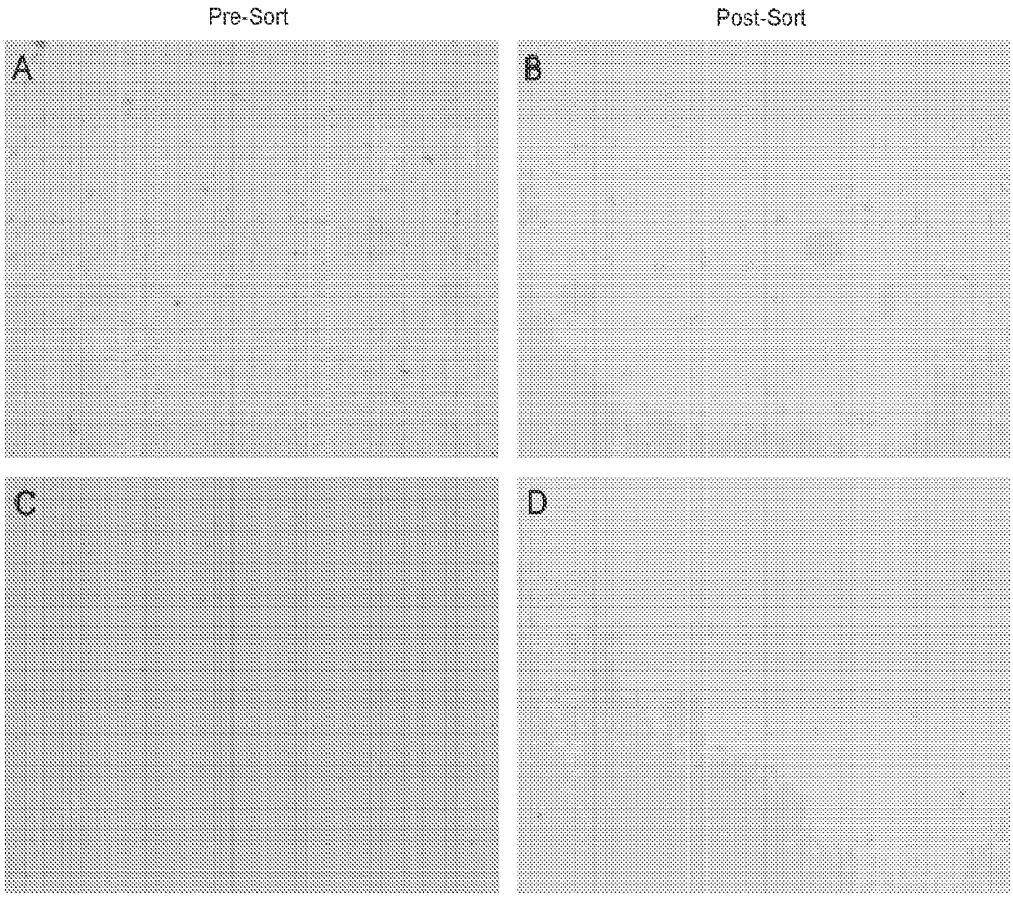


Figure 27. Microscope images of unsorted (A, C) and sorted (B, D) nuclei derived from lung (A, B) and brain (C, D) tissue. Samples were stained with PI and imaged at 20x(??). Objects stained with PI are nuclei while unstained objects are designated debris. There is much less debris in the sample after sorting with the LeviCell.

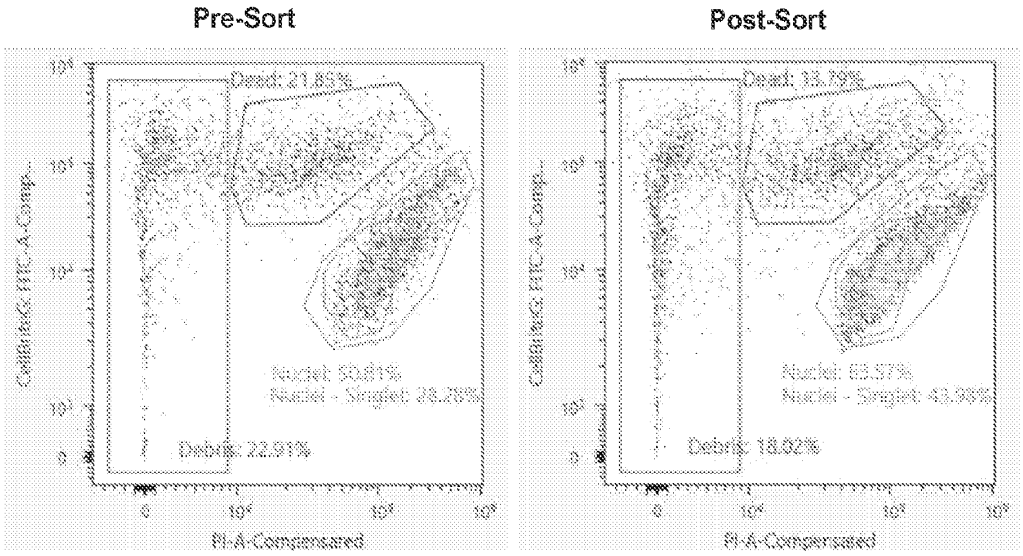


Figure 28. Flow cytometry analysis of unsorted (A) and sorted (B) nuclei derived from Jurkat cells. Samples were stained with PI and CellBrite Fix Green for 15 minutes at room temperature before analyzing on Sony SH800S sorter. Both the debris and dead cell populations are reduced after sorting and the nuclei population is enriched (50.81% to 63.57%). Additionally the singlet nuclei population is enriched from 28.28% to 43.98%.

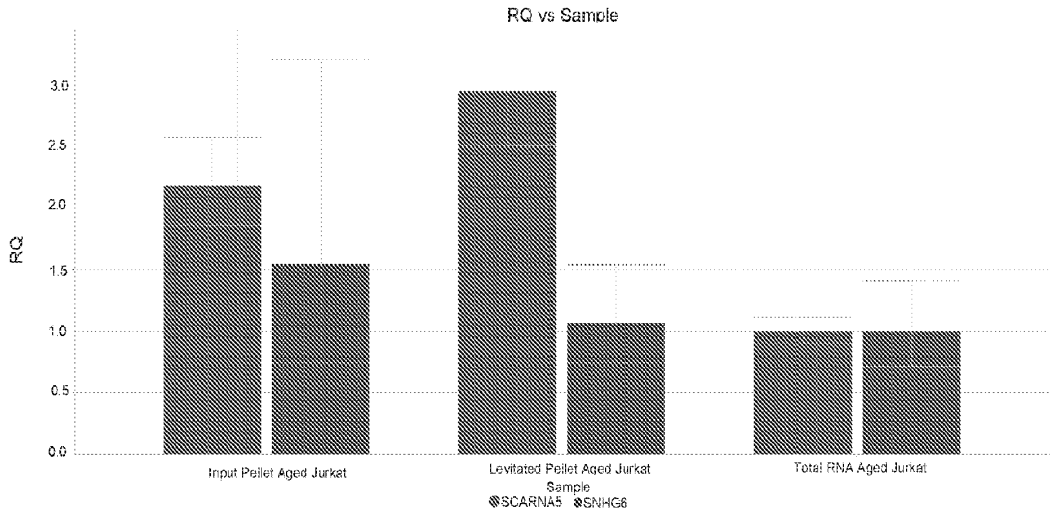

RQ vs Sample
RQ
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Input Pellet Aged Jurkat
Levitated Pellet Aged Jurkat
Total RNA Aged Jurkat
Sample
SCARNA5
SNHG6

Figure 29