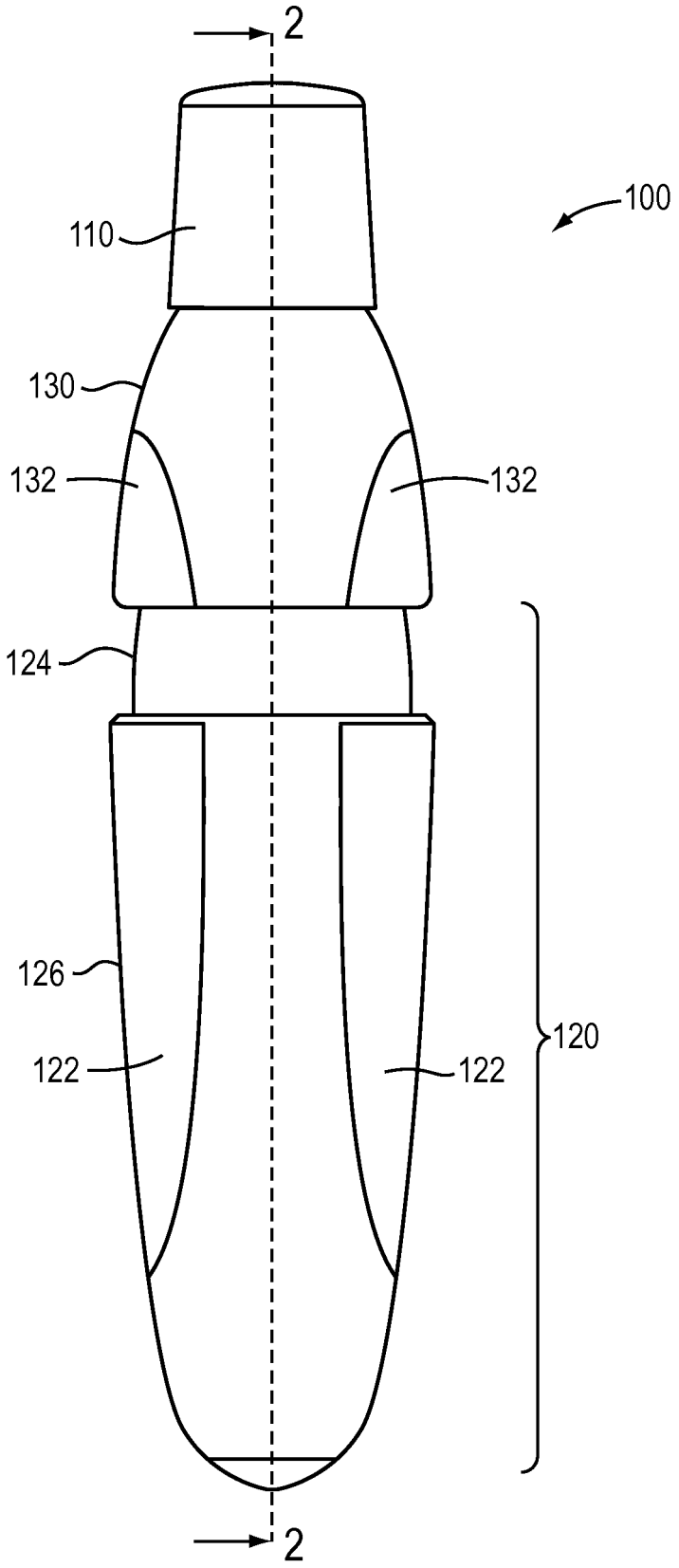



FIG. 1

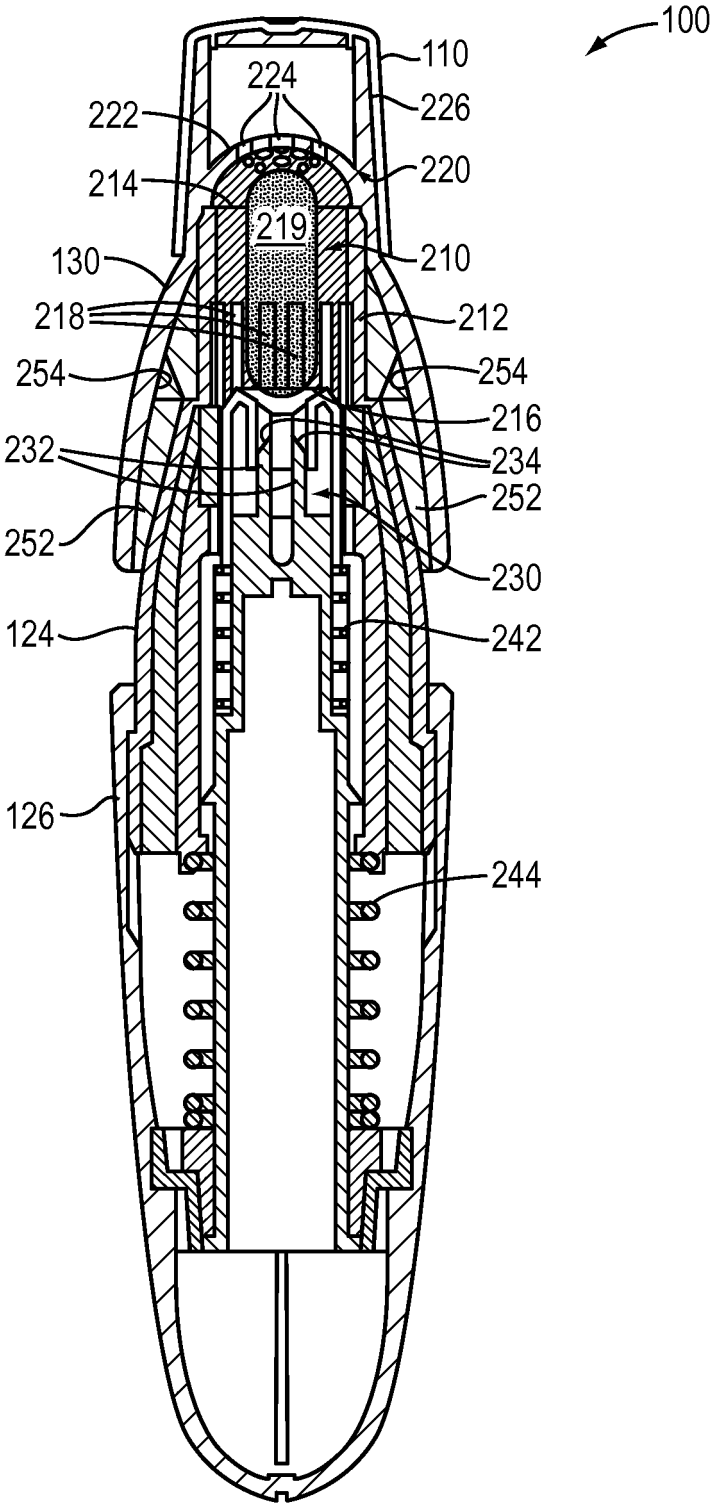

100
110
224
222
226
214
220
219
130
210
218
212
254
254
216
232
234
252
252
230
124
242
126
244

FIG. 2

300

| CAPSULE SIZE | CAPSULE VOLUME ($cm^3$) | LOCKED LENGTH (mm) | EXTERNAL DIAMETER (mm) |
|---|---|---|---|
| 5 | 0.13 | 11.1 | 4.91 |
| 4 | 0.21 | 14.3 | 5.31 |
| 3 | 0.30 | 15.9 | 5.82 |
| 2 | 0.37 | 18.0 | 6.35 |
| 1 | 0.50 | 19.4 | 6.91 |
| 0 | 0.68 | 21.7 | 7.65 |
| 0E | 0.70 | 23.1 | 7.65 |
| 00 | 0.95 | 23.3 | 8.53 |
| 000 | 1.37 | 26.14 | 9.91 |
| 13 | 3.2 | 30.0 | 15.3 |
| 12 | 5.0 | 40.5 | 15.3 |
| 12el | 7.5 | 57.0 | 15.5 |
| 11 | 10 | 47.5 | 20.9 |
| 10 | 18 | 64.0 | 23.4 |
| 7 | 24 | 78.0 | 23.4 |
| Su07 | 28 | 88.5 | 23.4 |

FIG. 3

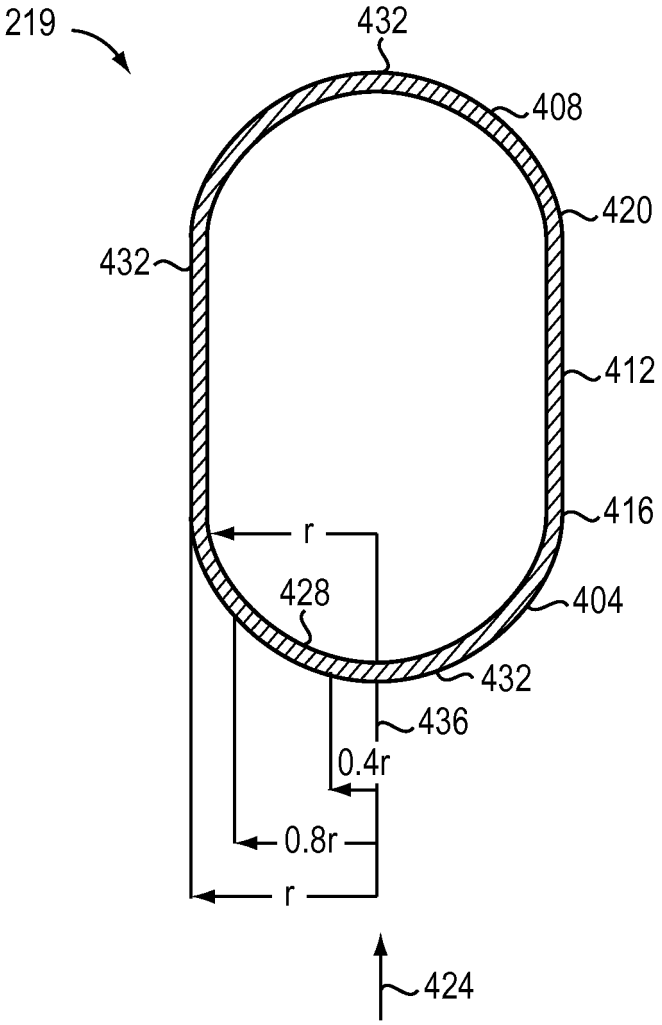



FIG. 4

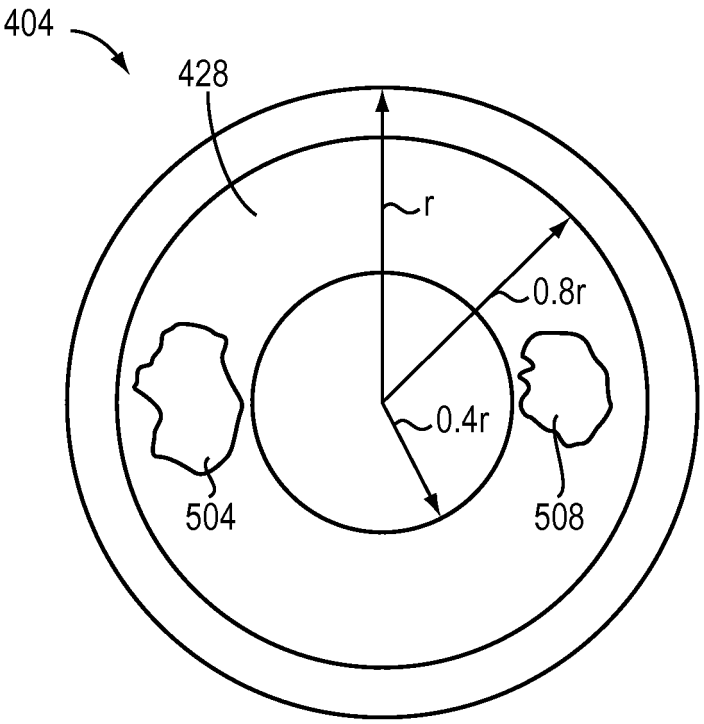


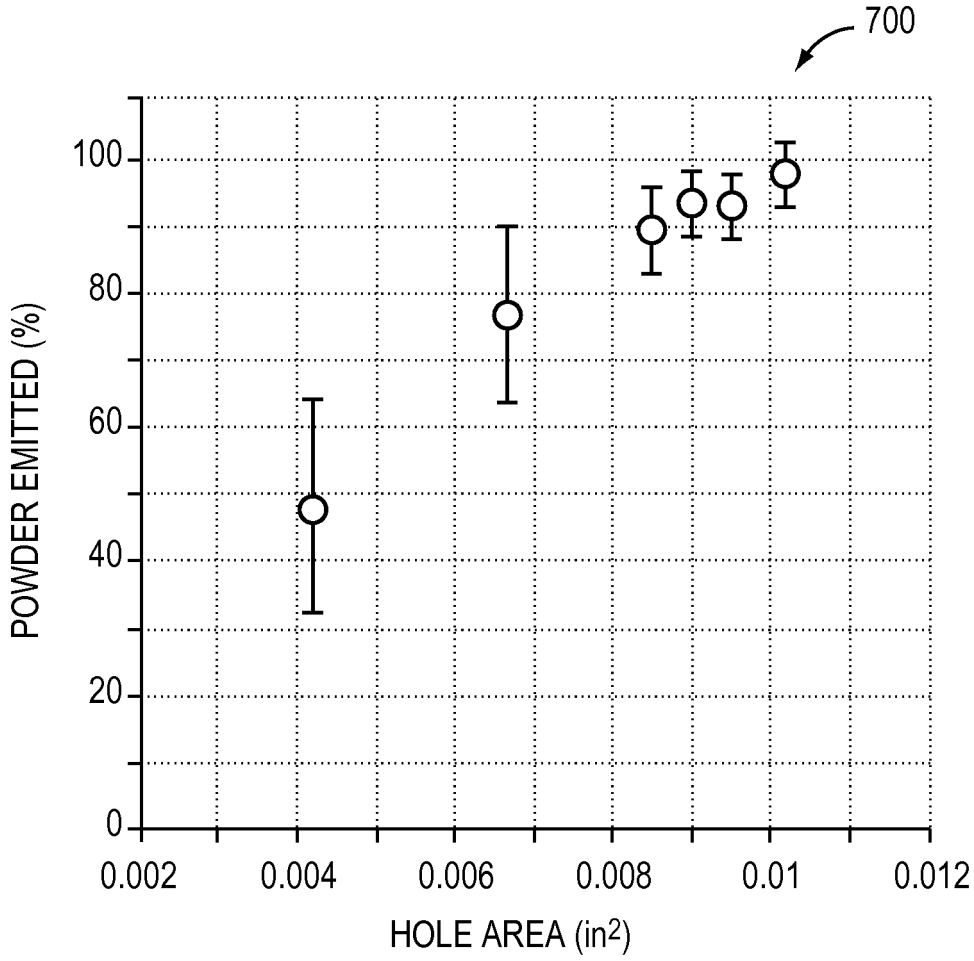

FIG. 5

600

RESULTS OF EMITTED POWDER TESTING

| TOTAL COMBINED SURFACE AREA OF ALL PUNCTURE HOLES ($in^2$) | TOTAL COMBINED SURFACE AREA OF ALL PUNCTURE HOLES ($cm^2$) | PERCENT OF TOTAL CAPSULE SURFACE AREA | EMITTED POWDER (%) | |
|---|---|---|---|---|
| | | | MEAN | STANDARD DEVIATION |
| 0.0102 | 0.065806 | 1.3 | 98 | 5.3 |
| 0.0095 | 0.061290 | 1.2 | 93 | 4.9 |
| 0.0090 | 0.058064 | 1.1 | 93 | 5.0 |
| 0.0085 | 0.054839 | 1.1 | 89 | 5.9 |
| 0.0067 | 0.043226 | 0.8 | 77 | 13.3 |
| 0.0042 | 0.027097 | 0.5 | 48 | 15.5 |

FIG. 6




TOTAL COMBINED SURFACE AREA OF ALL PUNCTURE HOLES
VERSUS PERCENT EMITTED POWDER
(WHISKERS REPRESENT 1 STANDARD DEVIATION)

FIG. 7

800

RESULTS OF FINITE ELEMENT ANALYSIS (FEA)
FOR CONSTANT LOADING FORCE APPLIED AT VARIOUS LOCATIONS

| LOCATION OF PUNCTURE HOLE CENTER (% OF DOME RADIUS) | DEFLECTION UNDER LOAD (in) |
|---|---|
| 38 | 0.146 |
| 44 | 0.103 |
| 51 | 0.0513 |
| 57 | 0.0375 |
| 64 | 0.0414 |
| 70 | 0.0486 |
| 76 | 0.0365 |
| 83 | 0.0408 |

FIG. 8

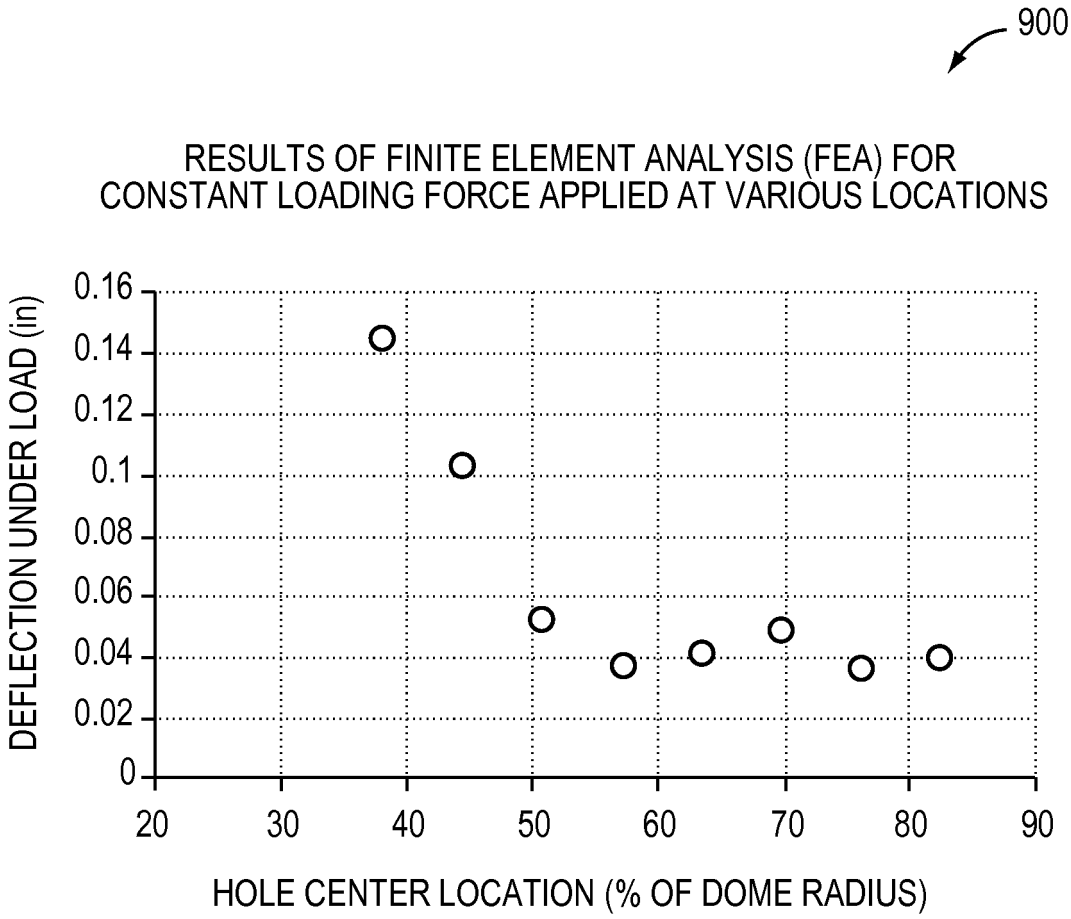

900
RESULTS OF FINITE ELEMENT ANALYSIS (FEA) FOR
CONSTANT LOADING FORCE APPLIED AT VARIOUS LOCATIONS
DEFLECTION UNDER LOAD (in)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
20
30
40
50
60
70
80
90
HOLE CENTER LOCATION (% OF DOME RADIUS)

FIG. 9