

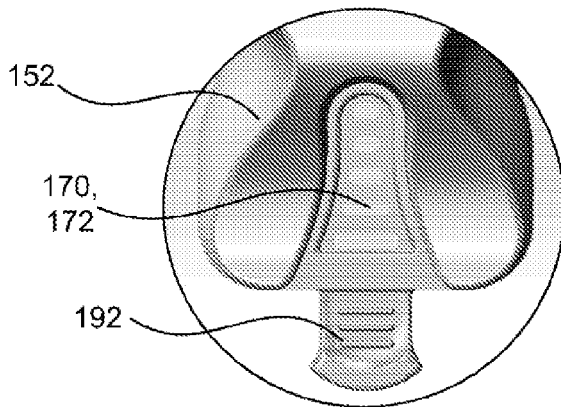


FIG. 1C

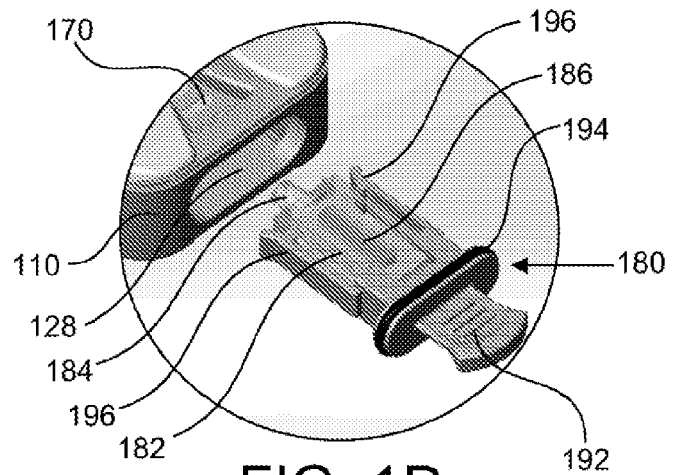


FIG. 1D

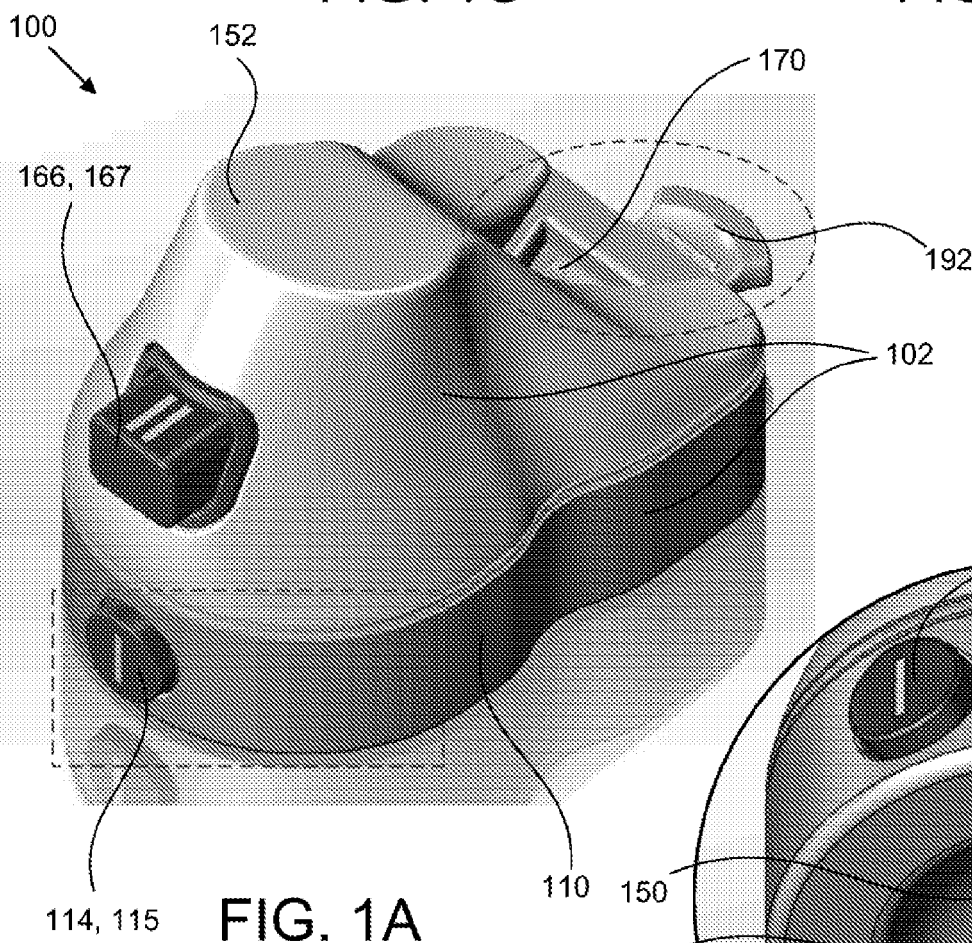


FIG. 1A

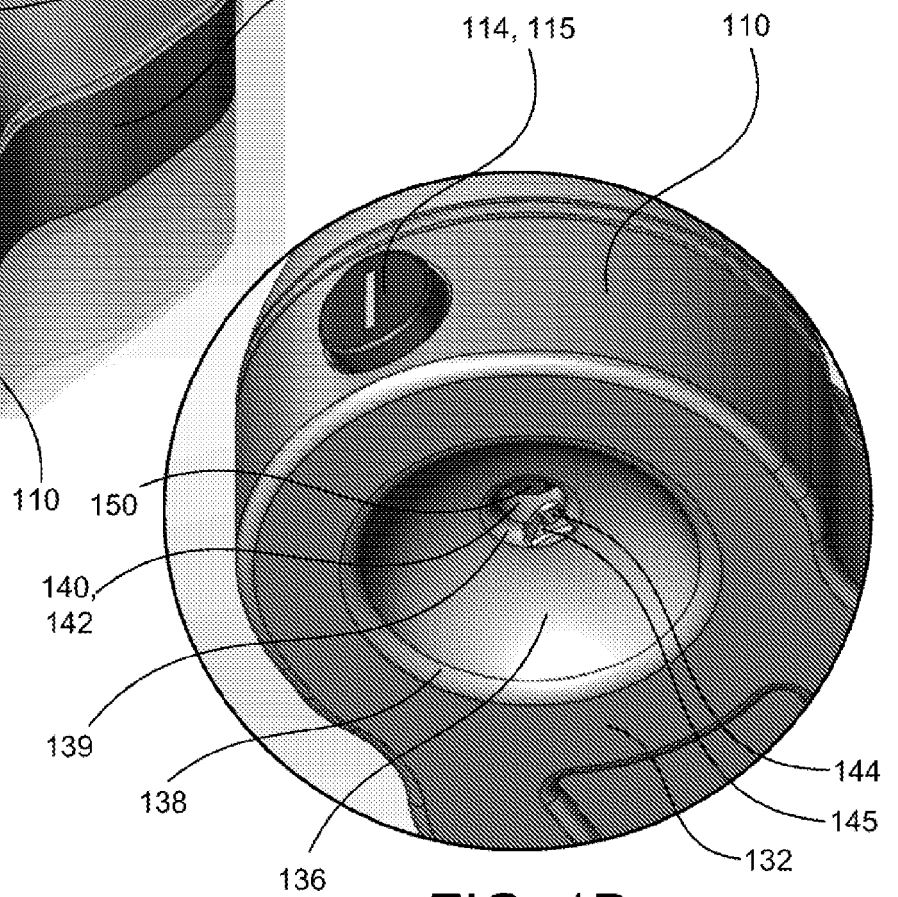


FIG. 1B

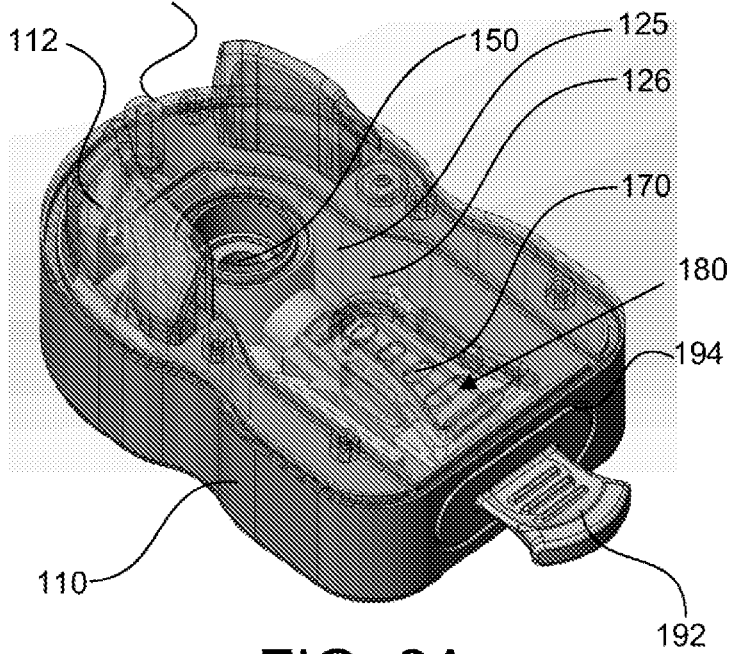


FIG. 2A

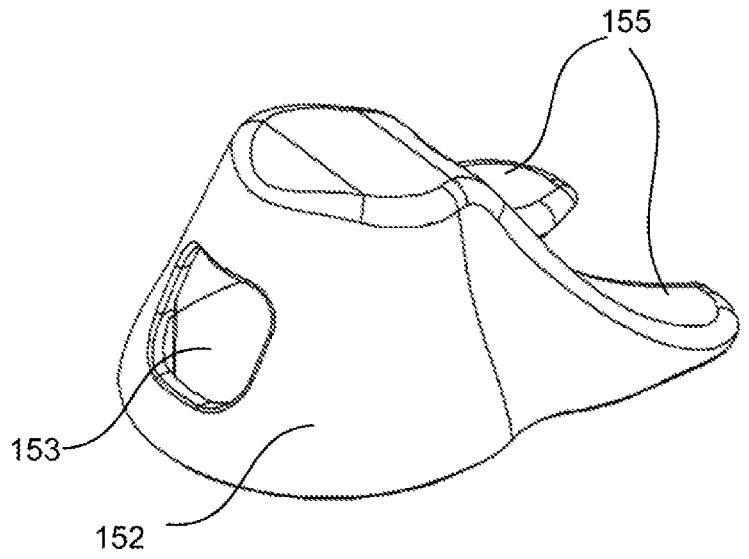


FIG. 2B

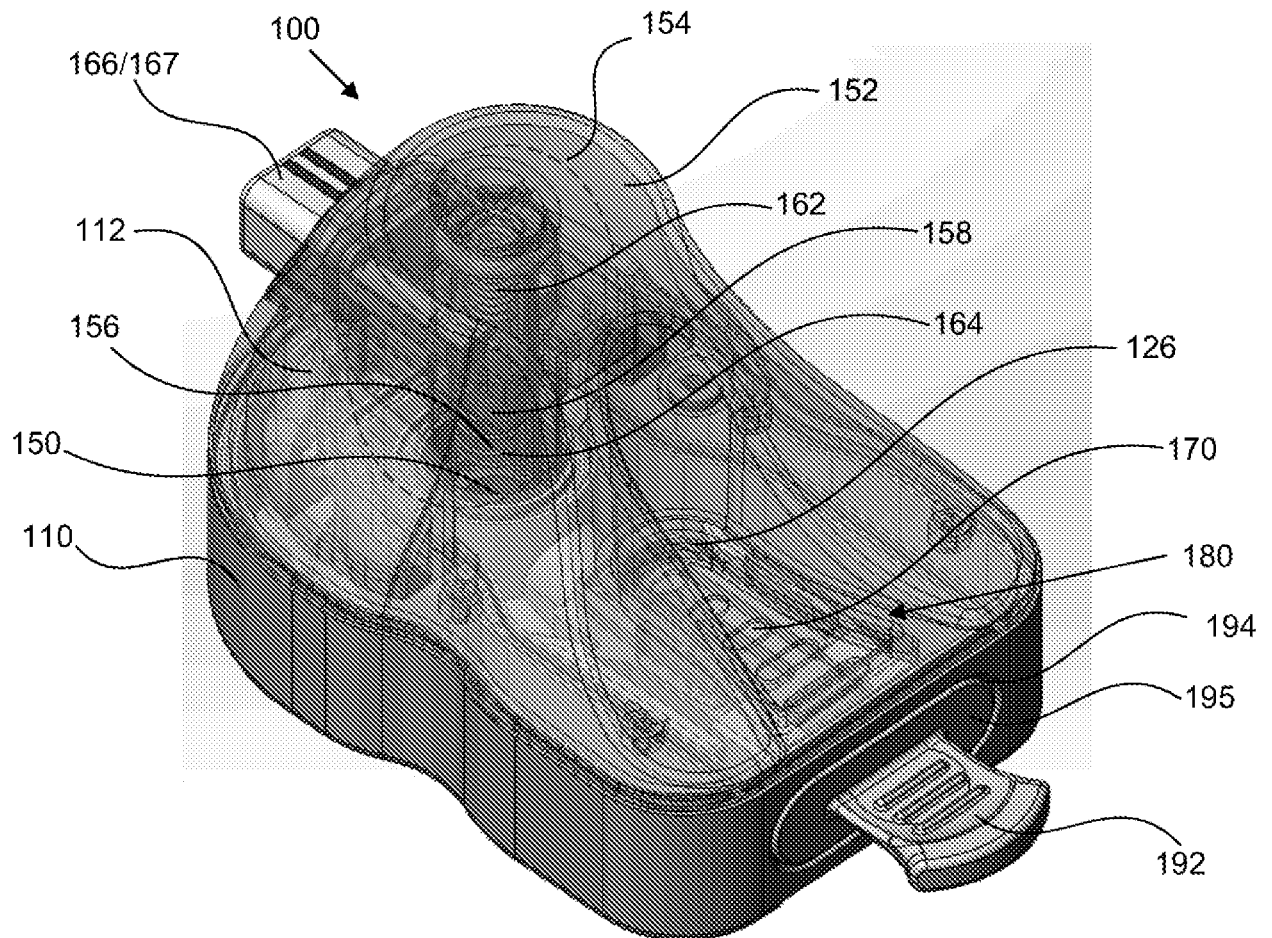


FIG. 2C

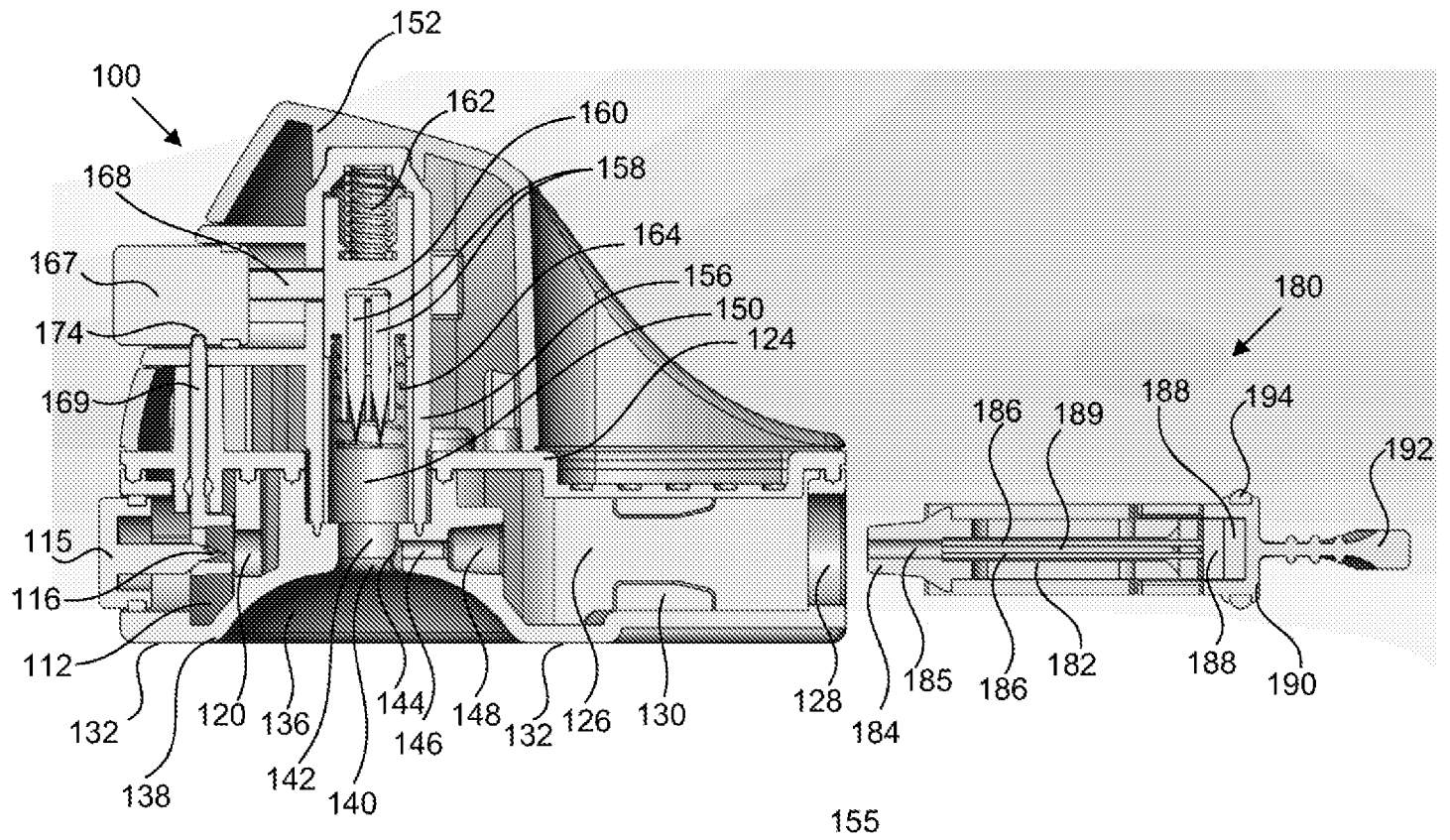


FIG. 3A

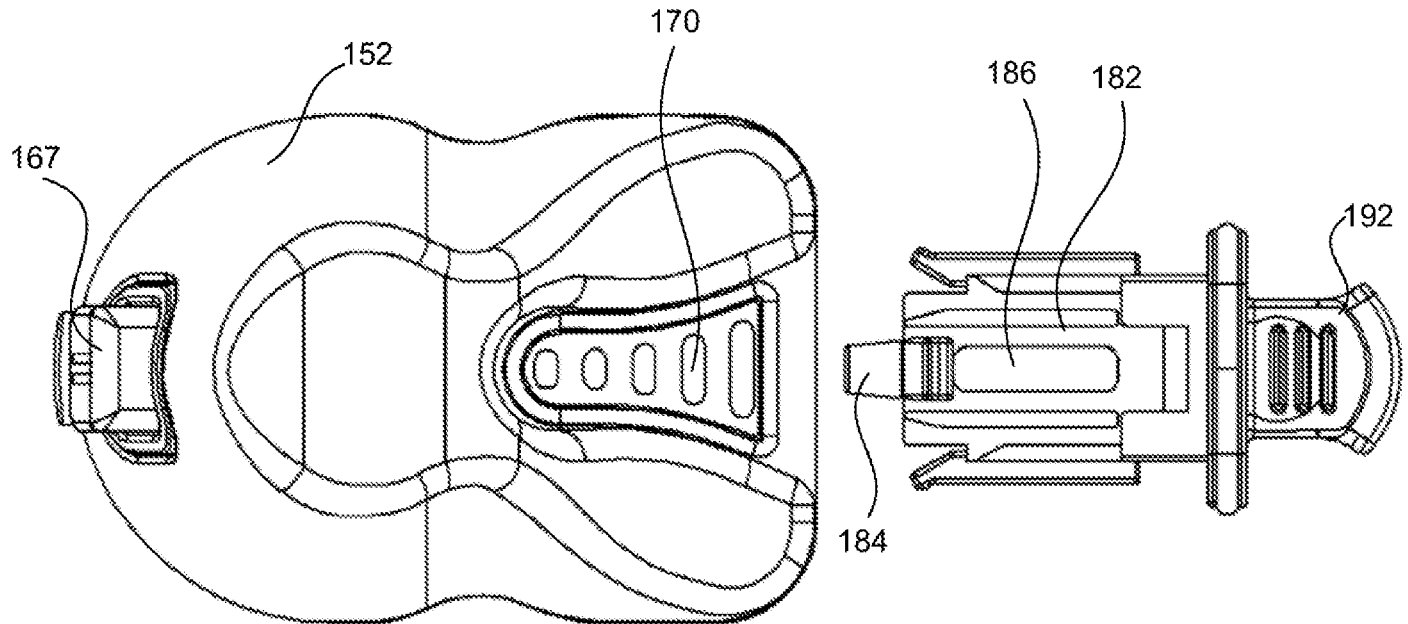


FIG. 3B

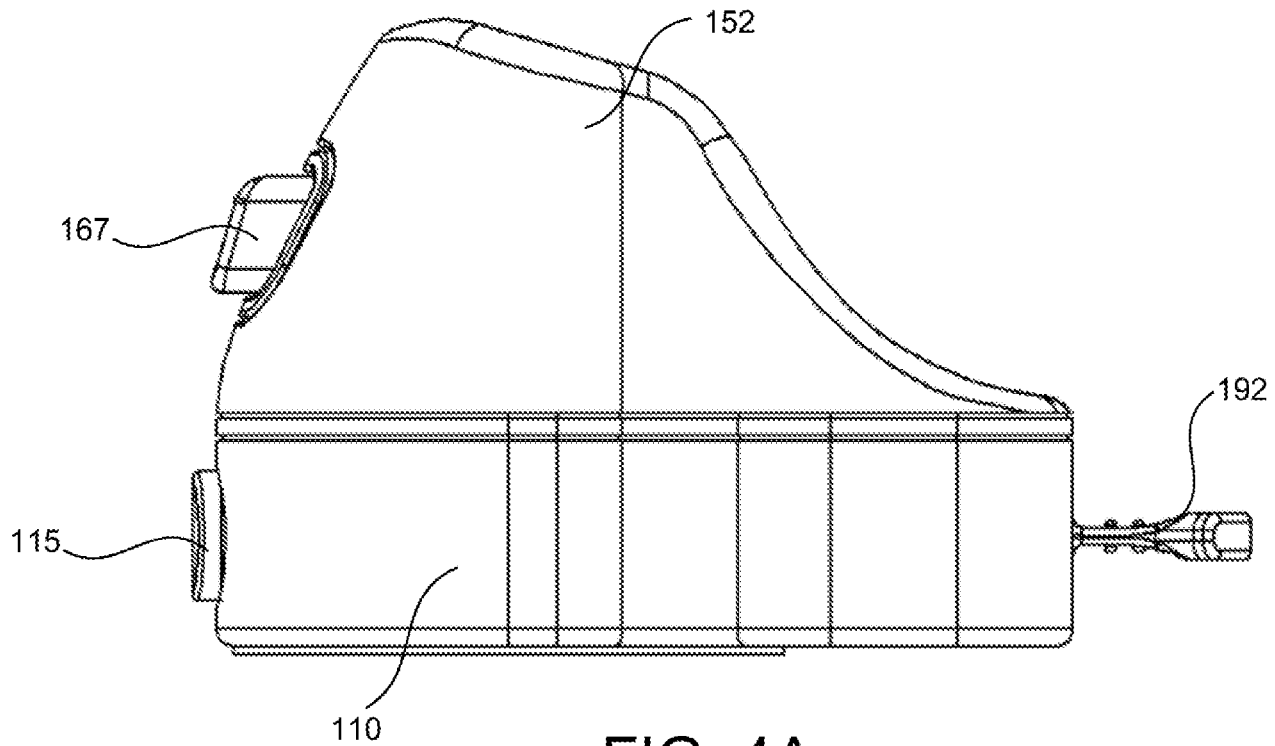


FIG. 4A

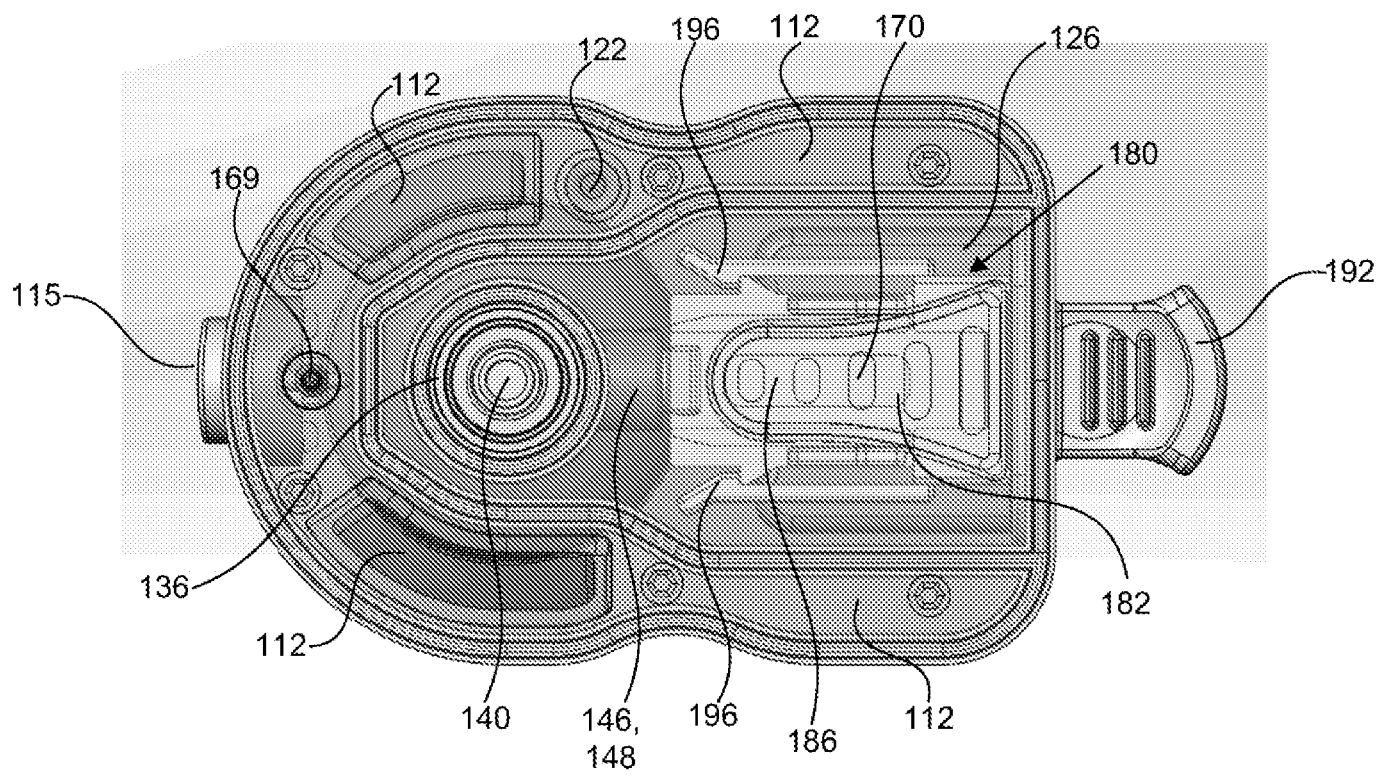


FIG. 4B

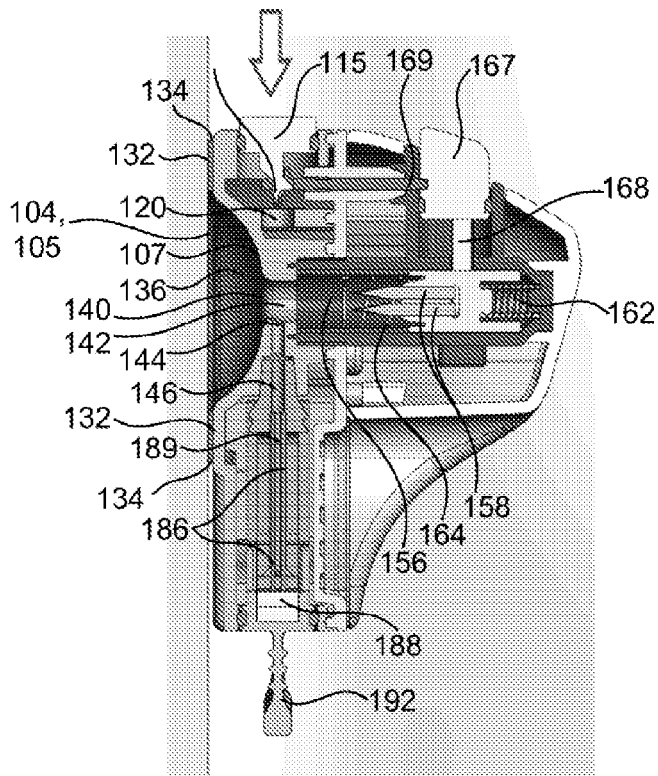


FIG. 5A

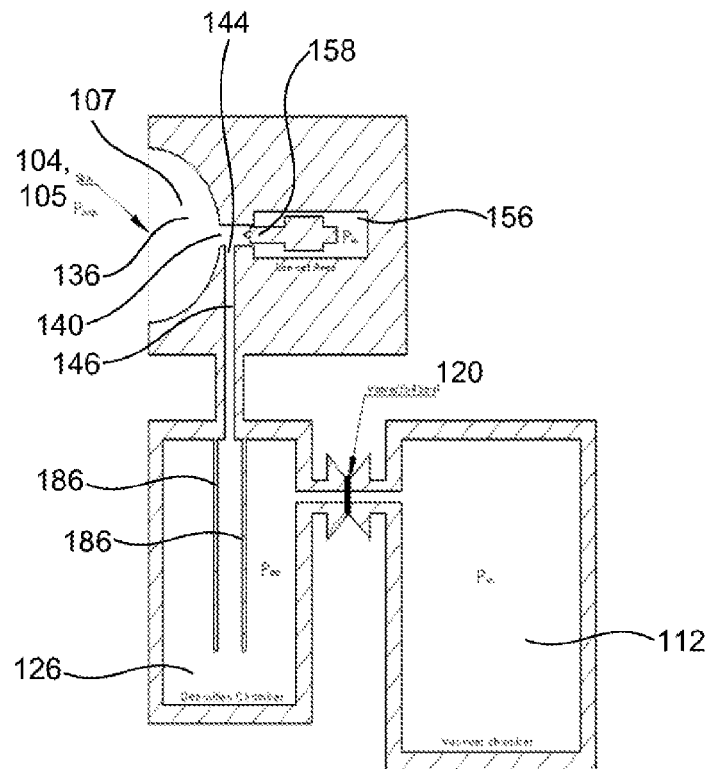


FIG. 5B

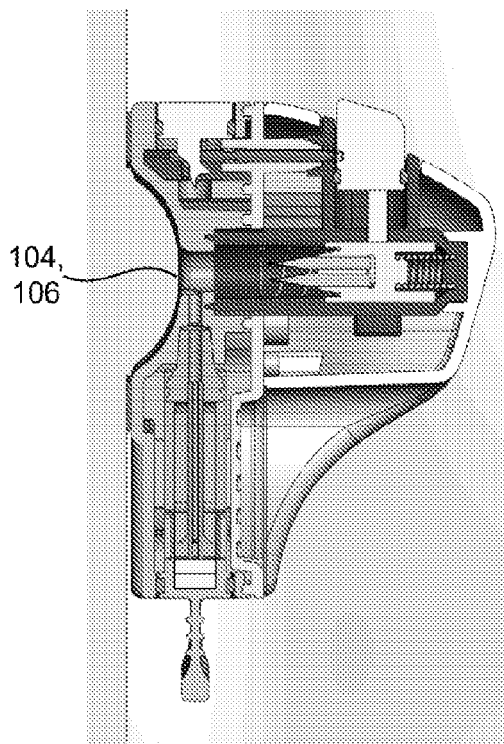


FIG. 6A

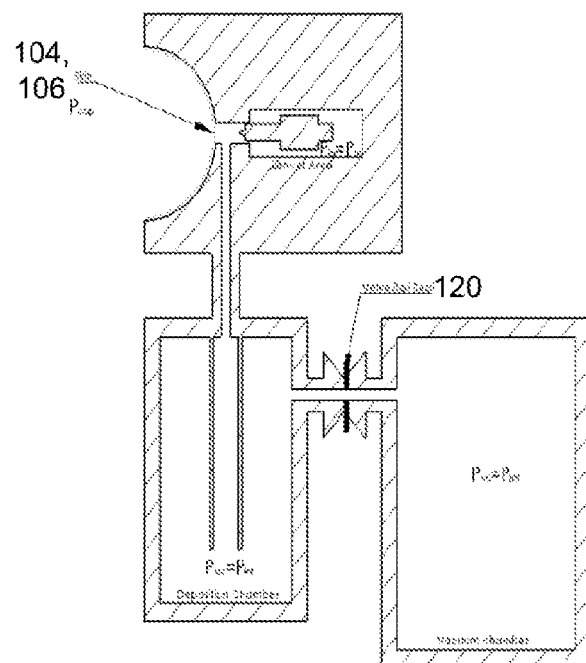


FIG. 6B

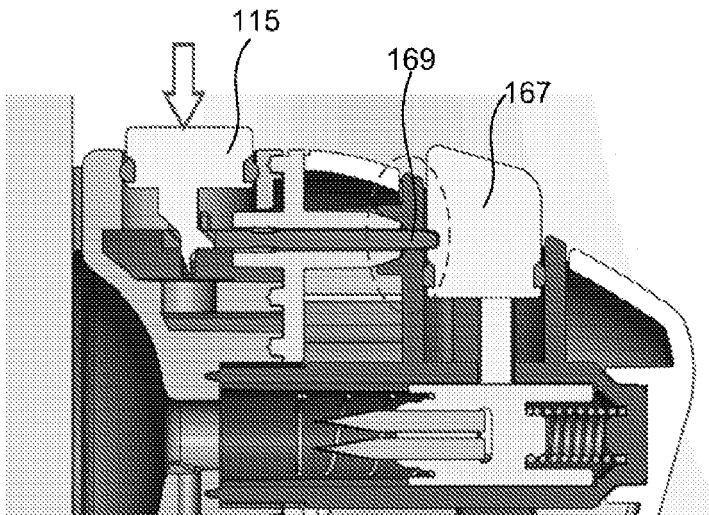


FIG. 7A

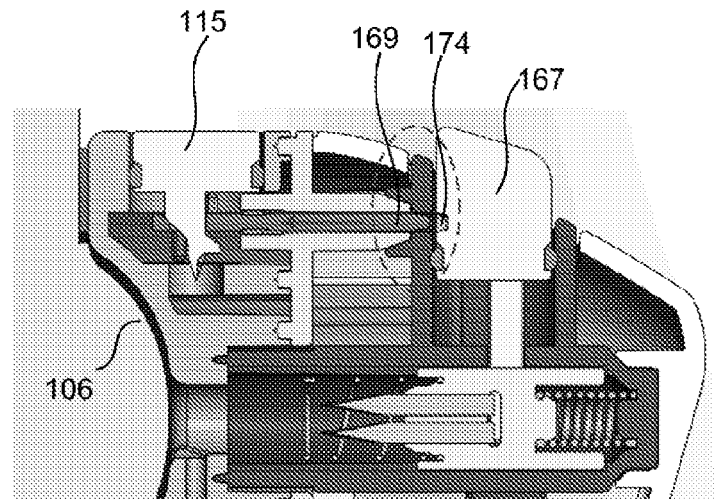


FIG. 7B

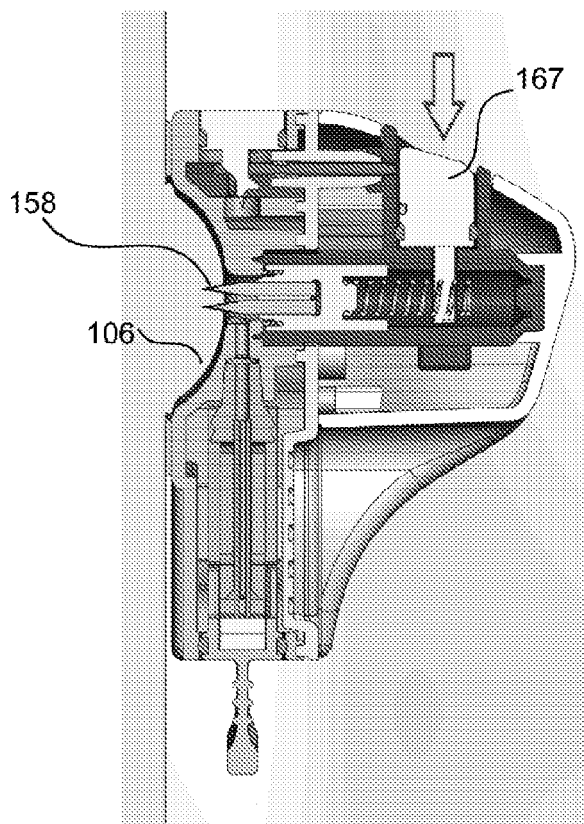


FIG. 8A

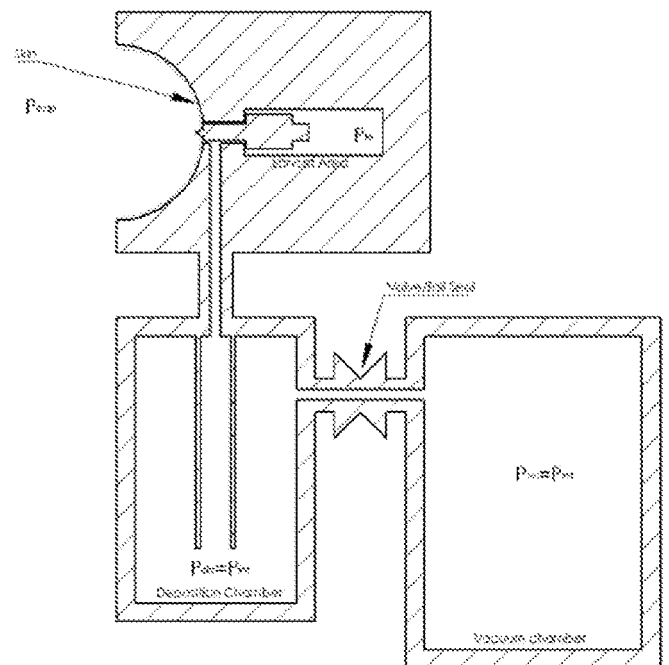


FIG. 8B

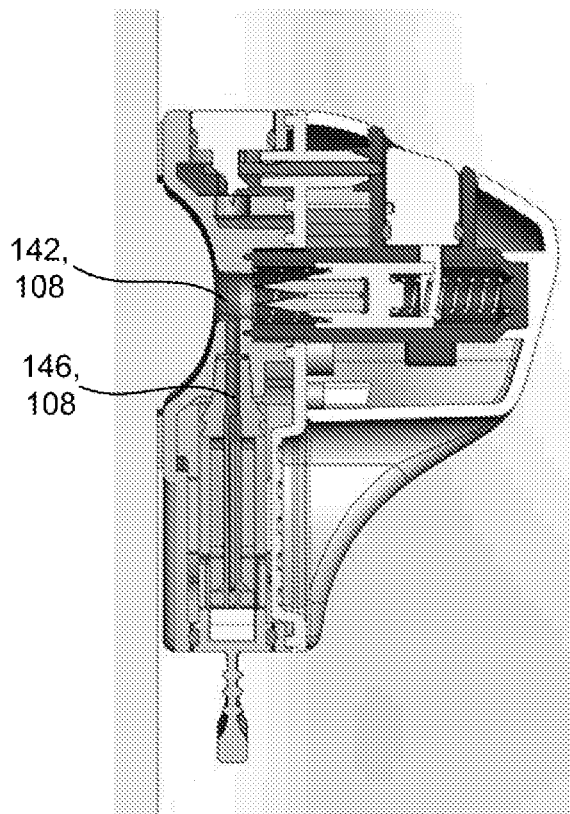


FIG. 9A

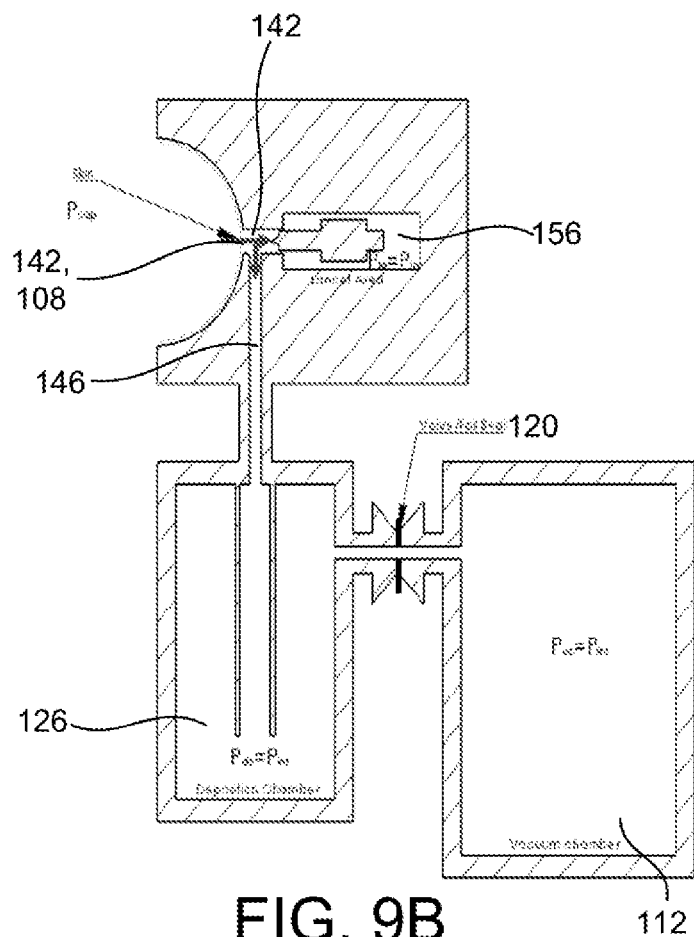


FIG. 9B

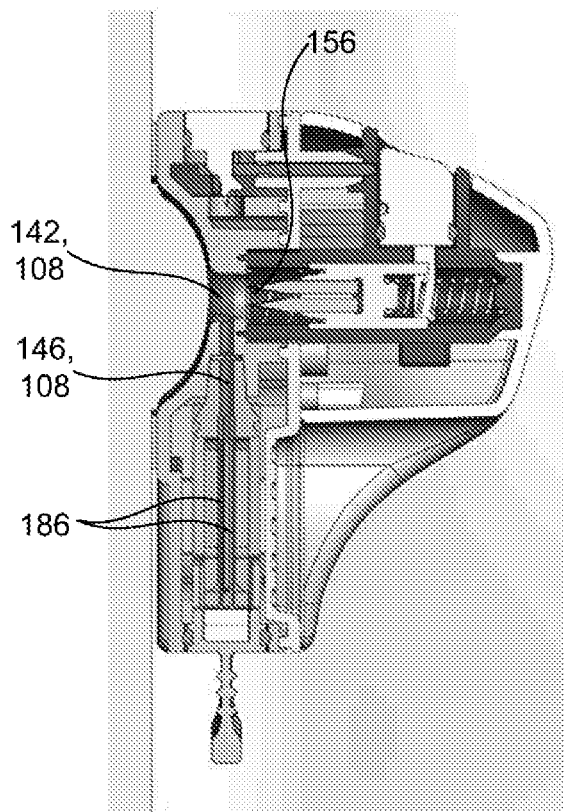


FIG. 10A

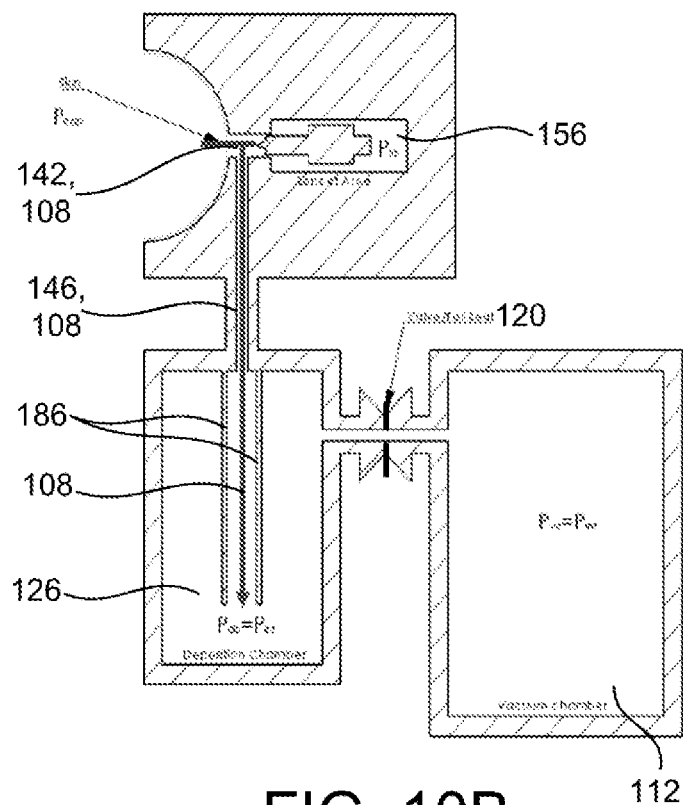
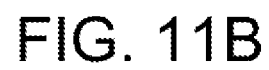


FIG. 10B



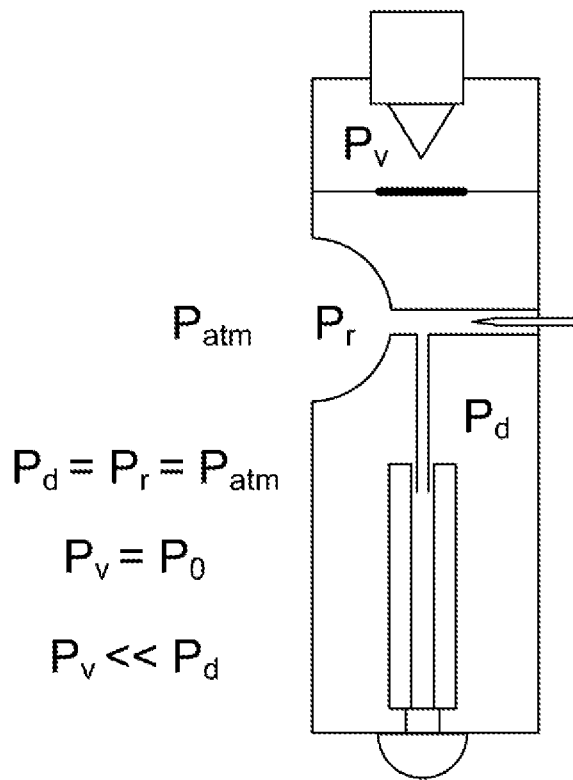


FIG. 12A

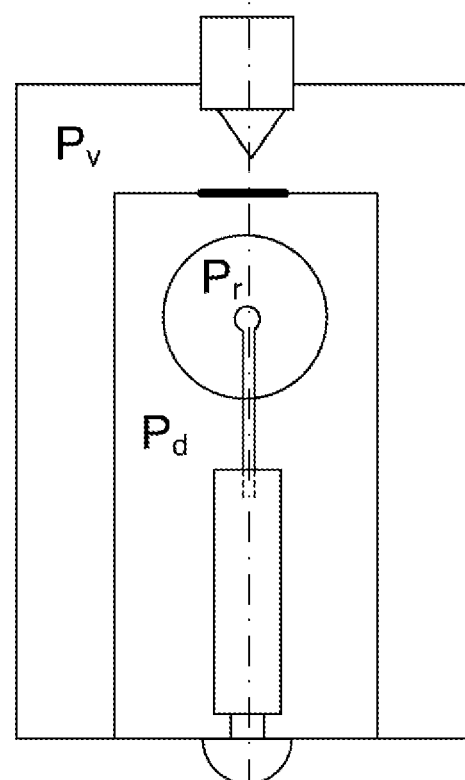


FIG. 12B

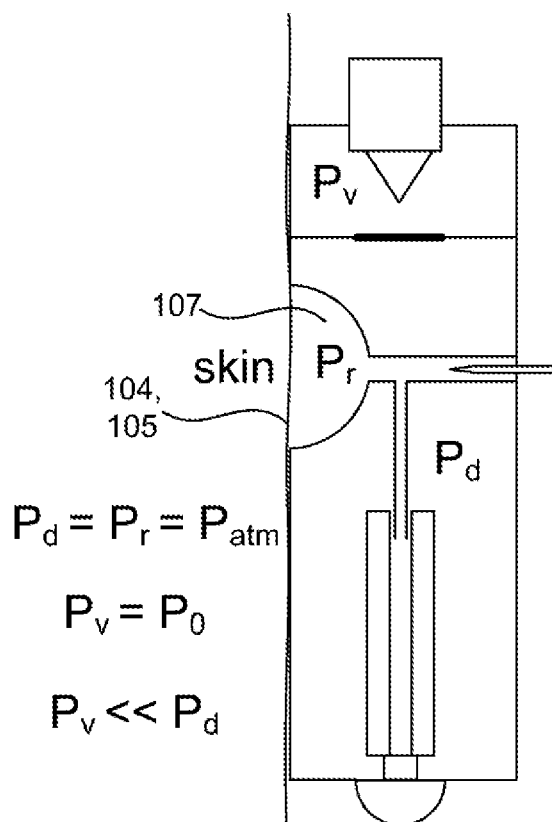


FIG. 13A

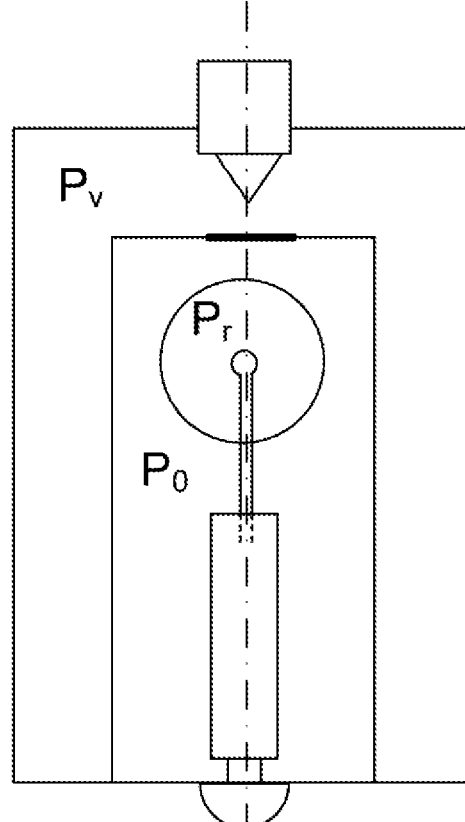


FIG. 13B

P_d and P_r decrease
 P_v increases

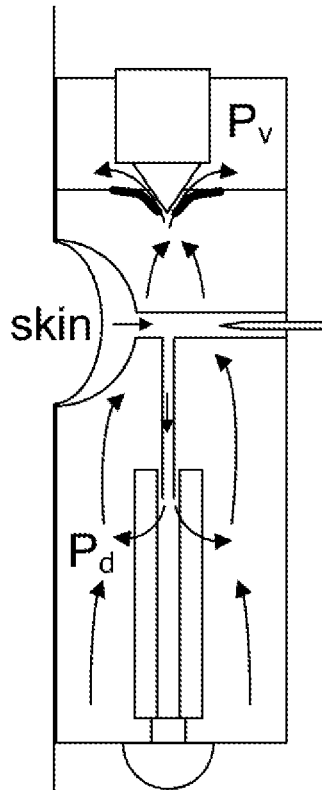


FIG. 14A

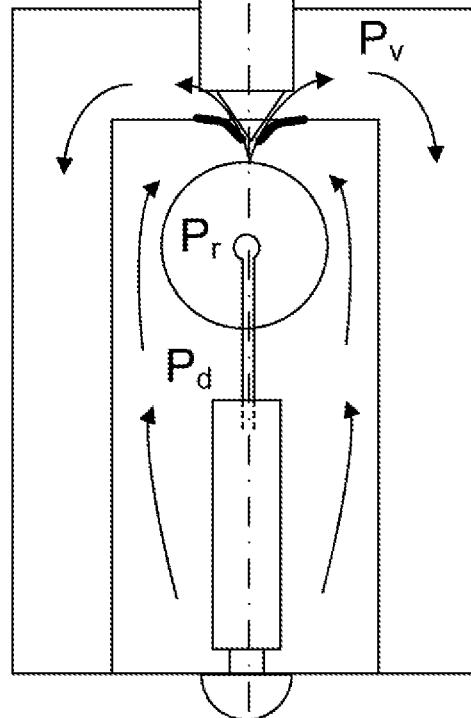


FIG. 14B

$P_d = P_v = P_p = P_1$
 $P_0 < P_1 < P_{atm}$

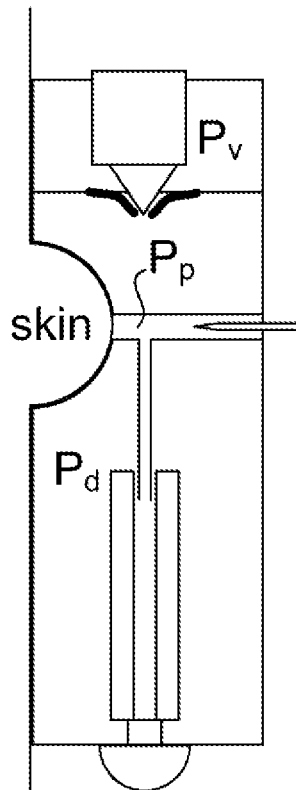


FIG. 15A

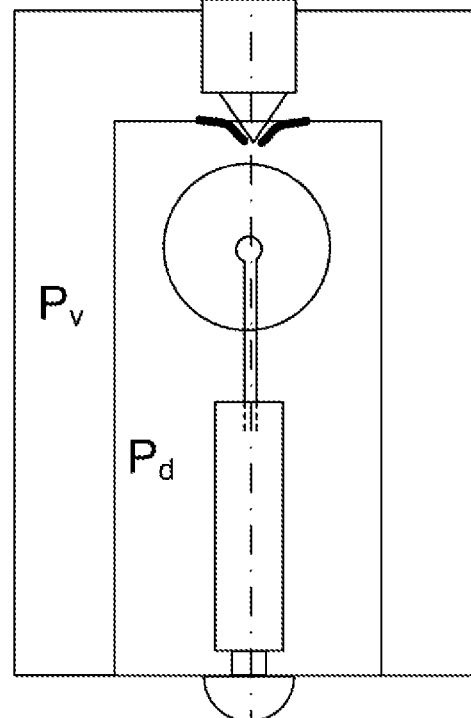


FIG. 15B

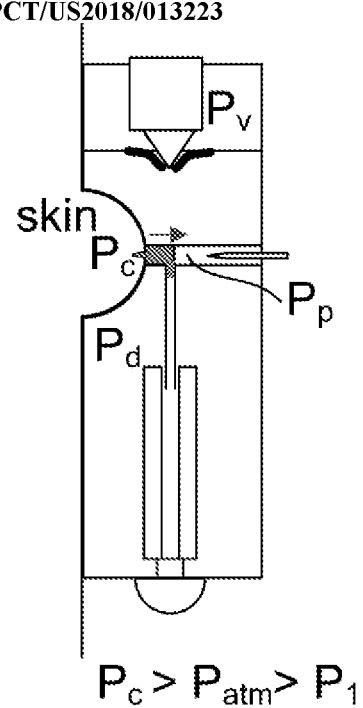


FIG. 16C

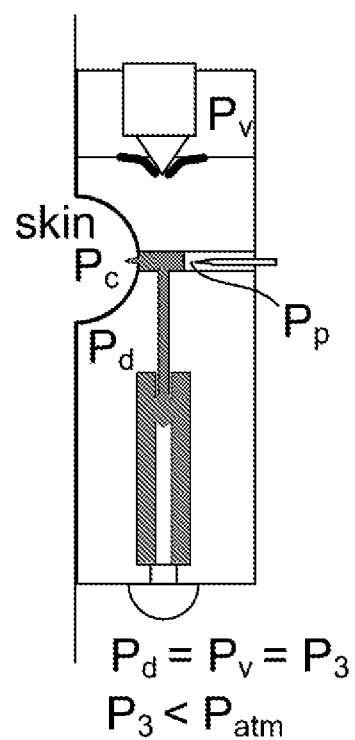


FIG. 16F

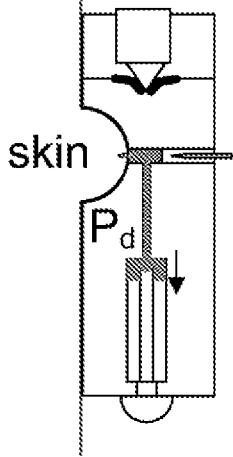


FIG. 17A

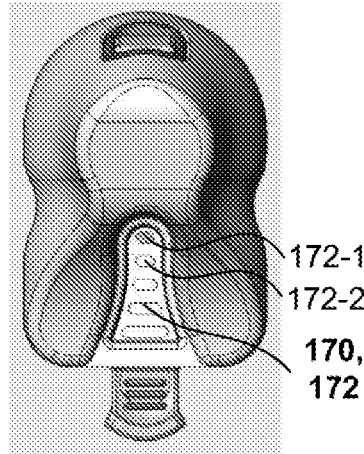


FIG. 17B

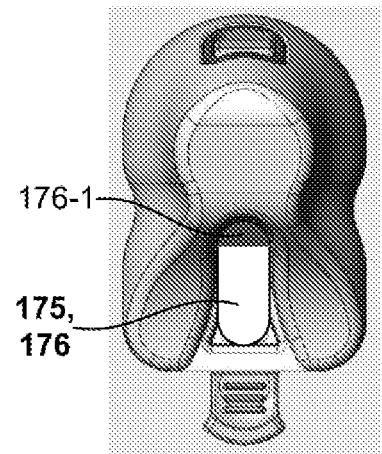


FIG. 17C

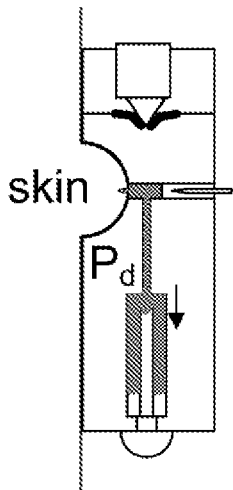


FIG. 18A

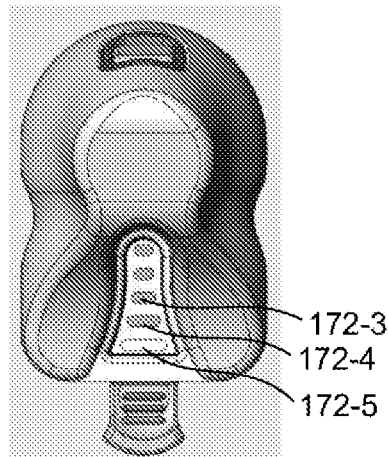


FIG. 18B

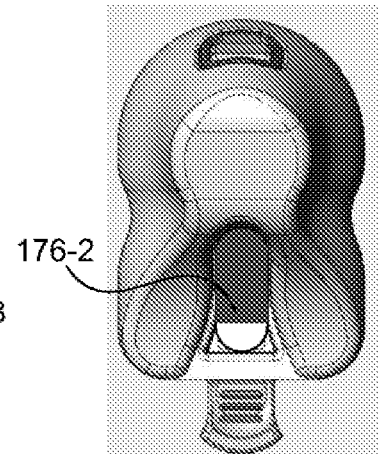


FIG. 18C

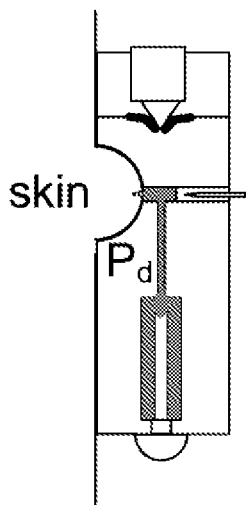


FIG. 19A

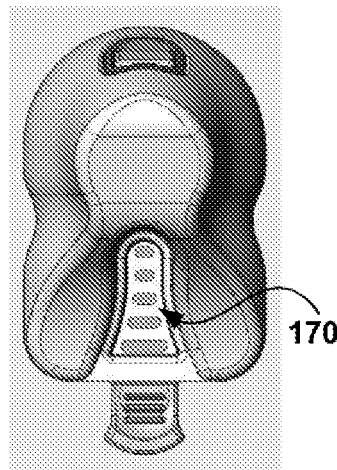


FIG. 19B

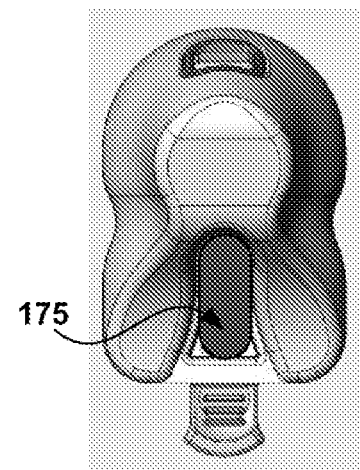


FIG. 19C

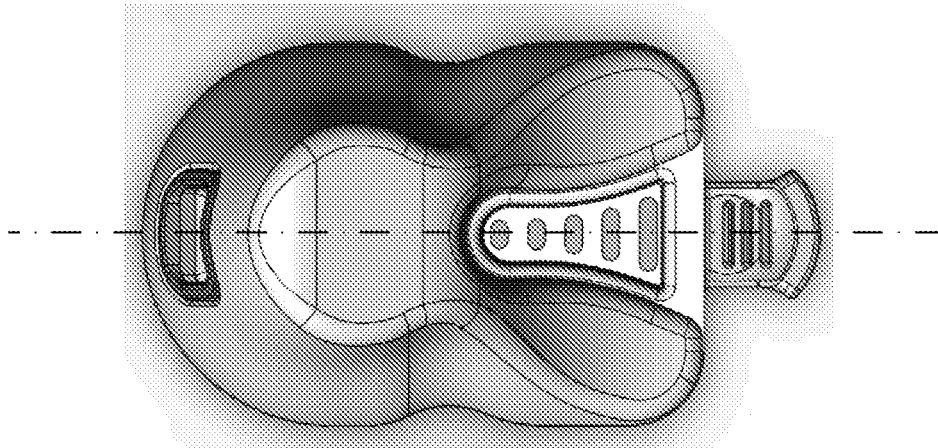


FIG. 20A

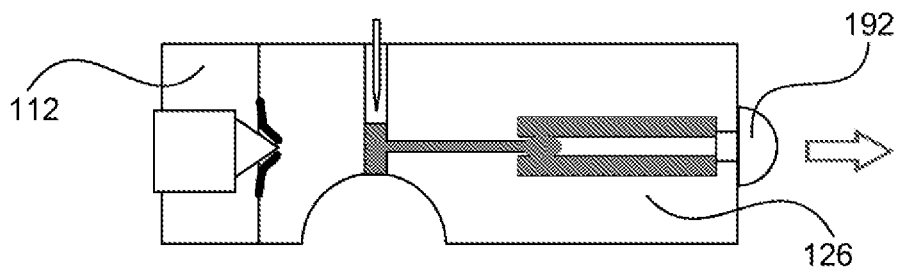


FIG. 20B

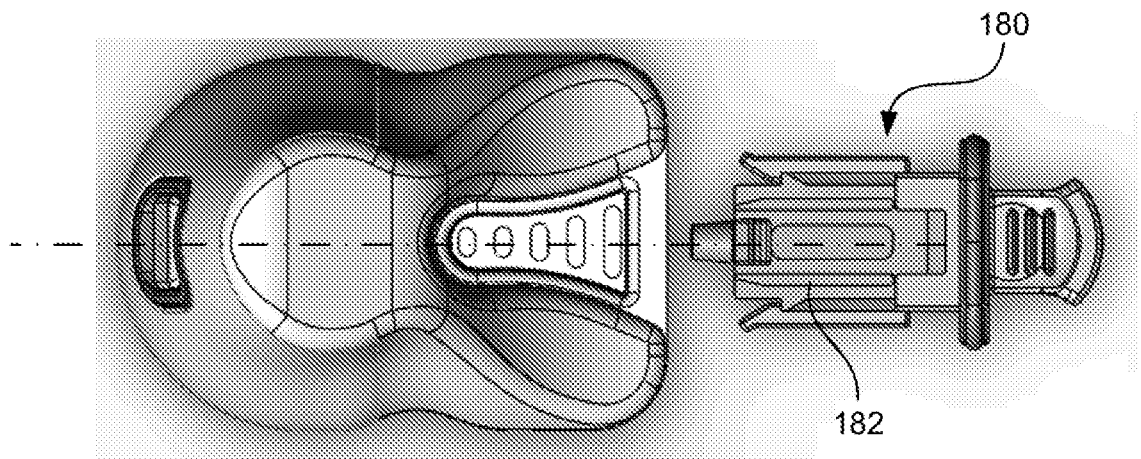


FIG. 21A

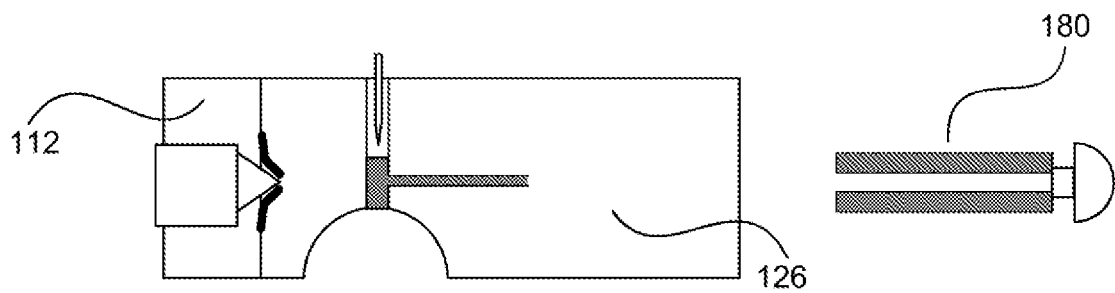


FIG. 21B

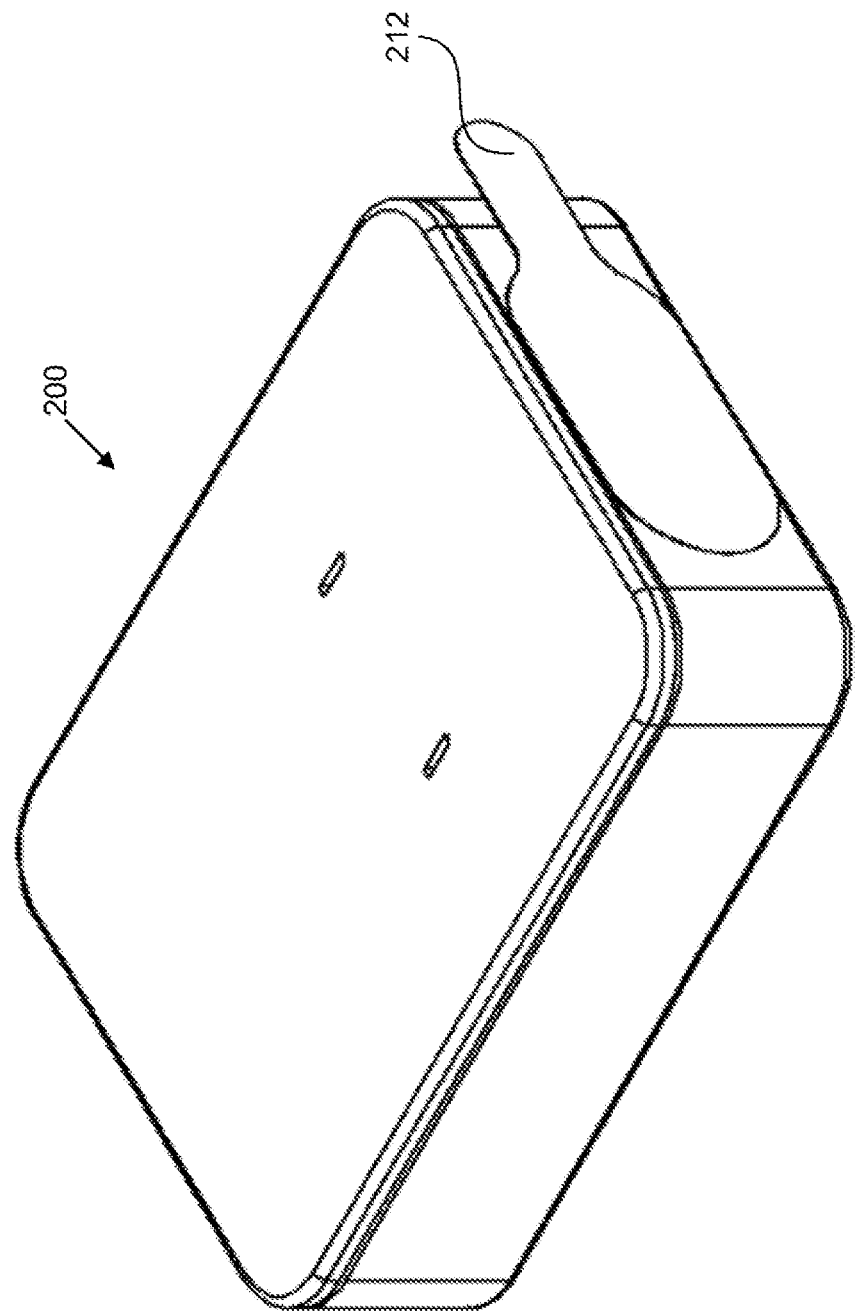


FIG. 22A

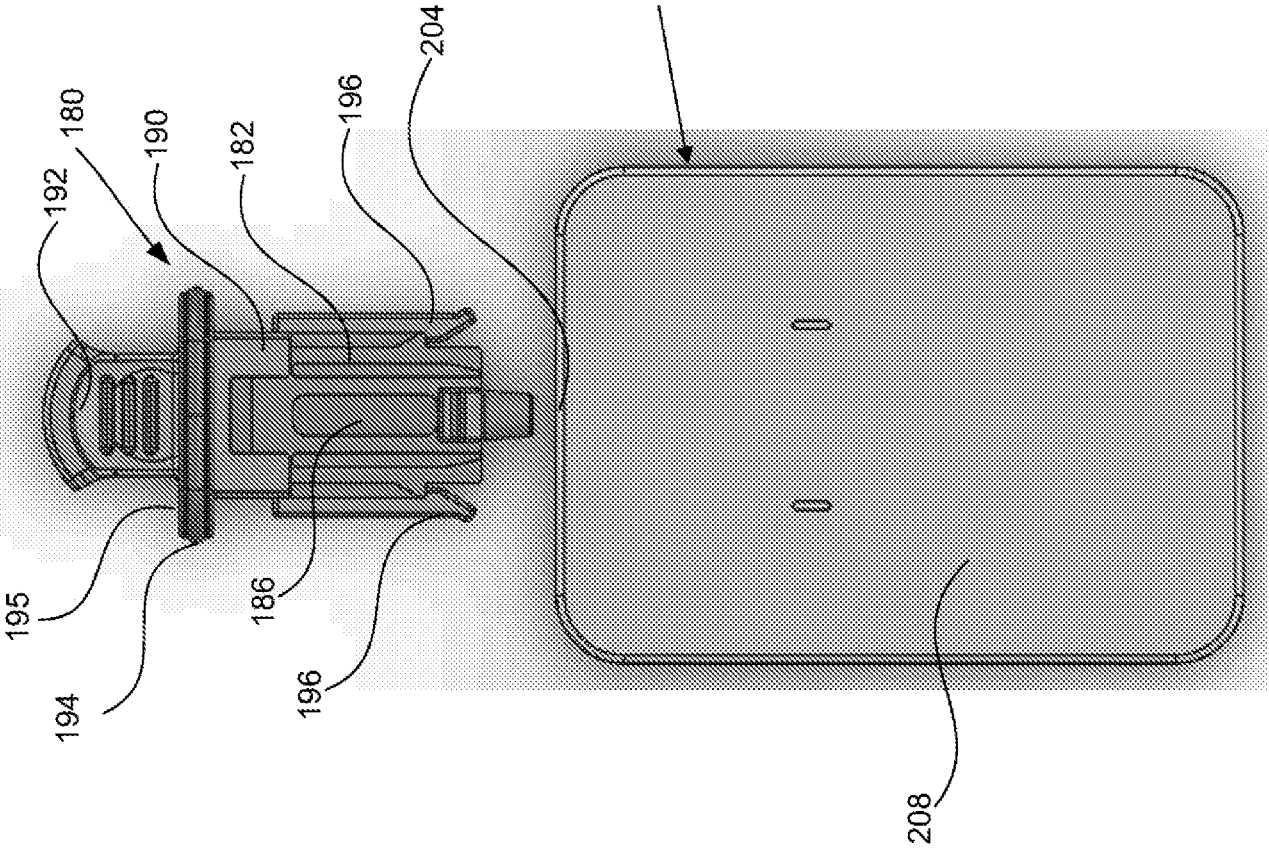


FIG. 22B

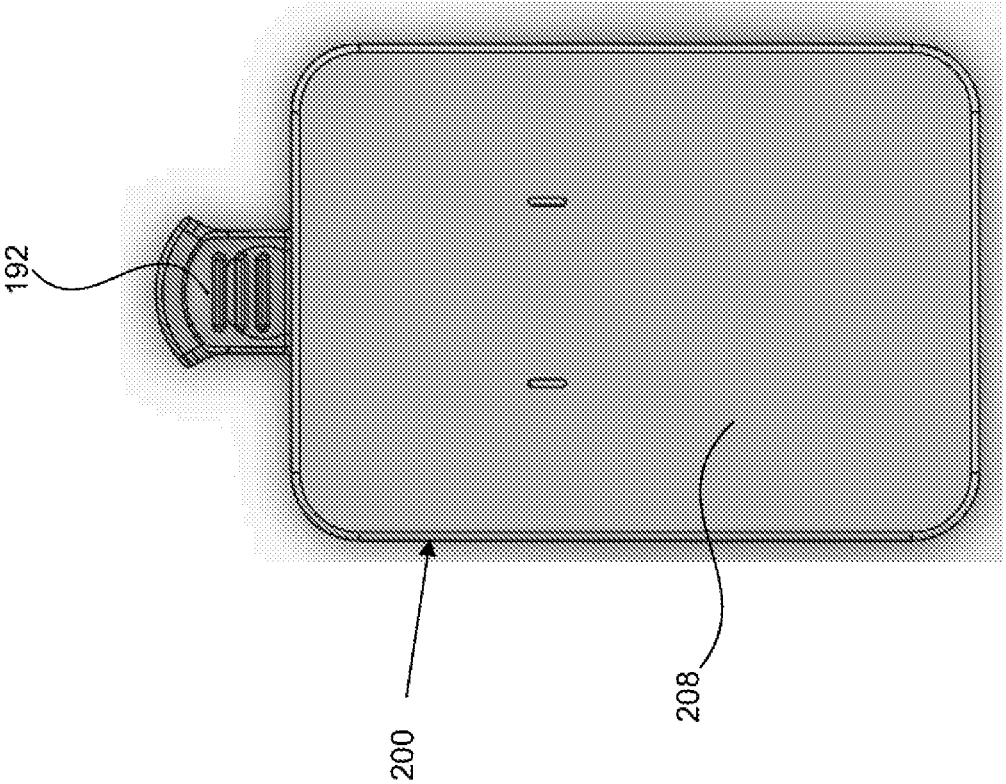


FIG. 22C

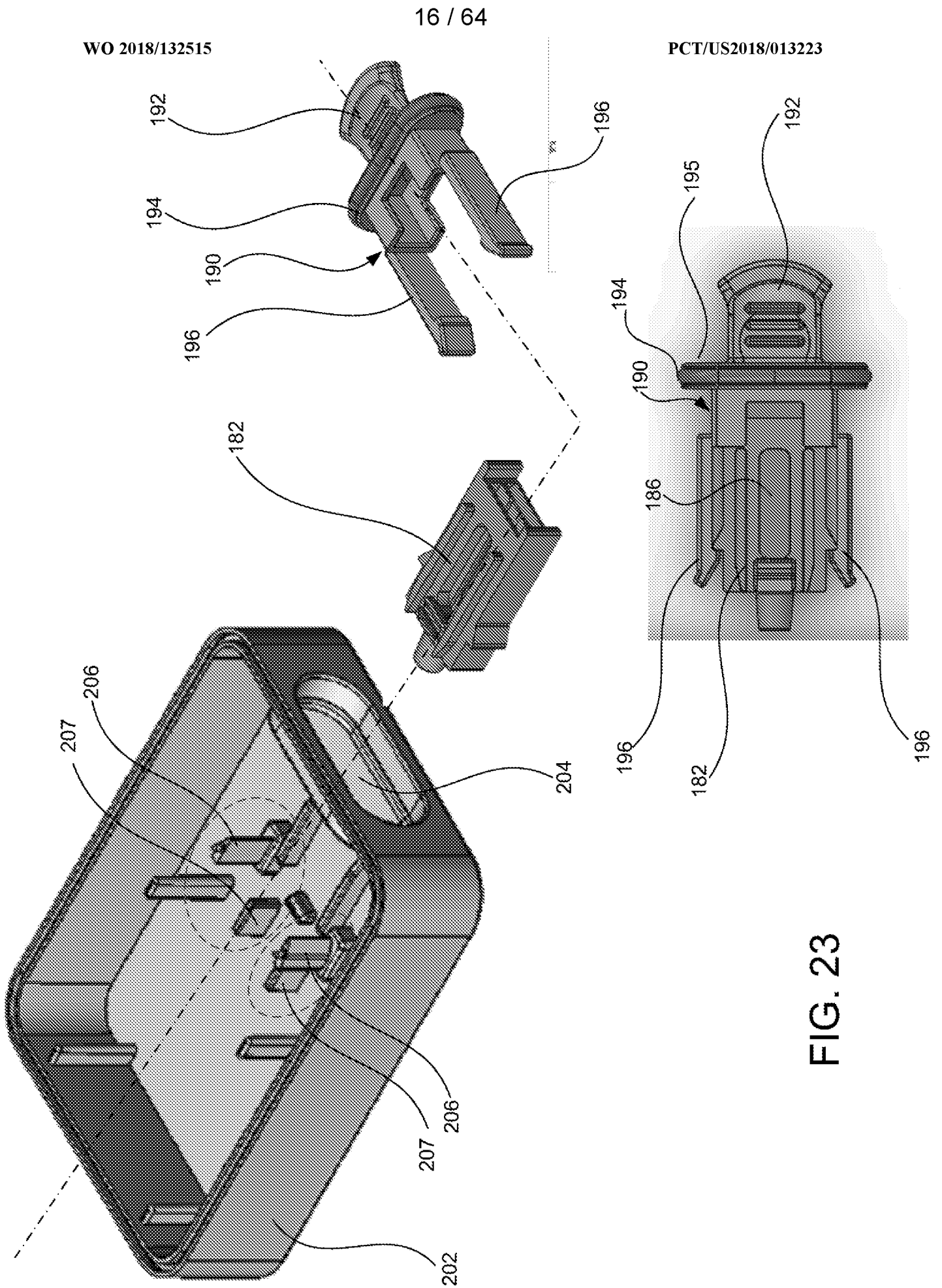


FIG. 23

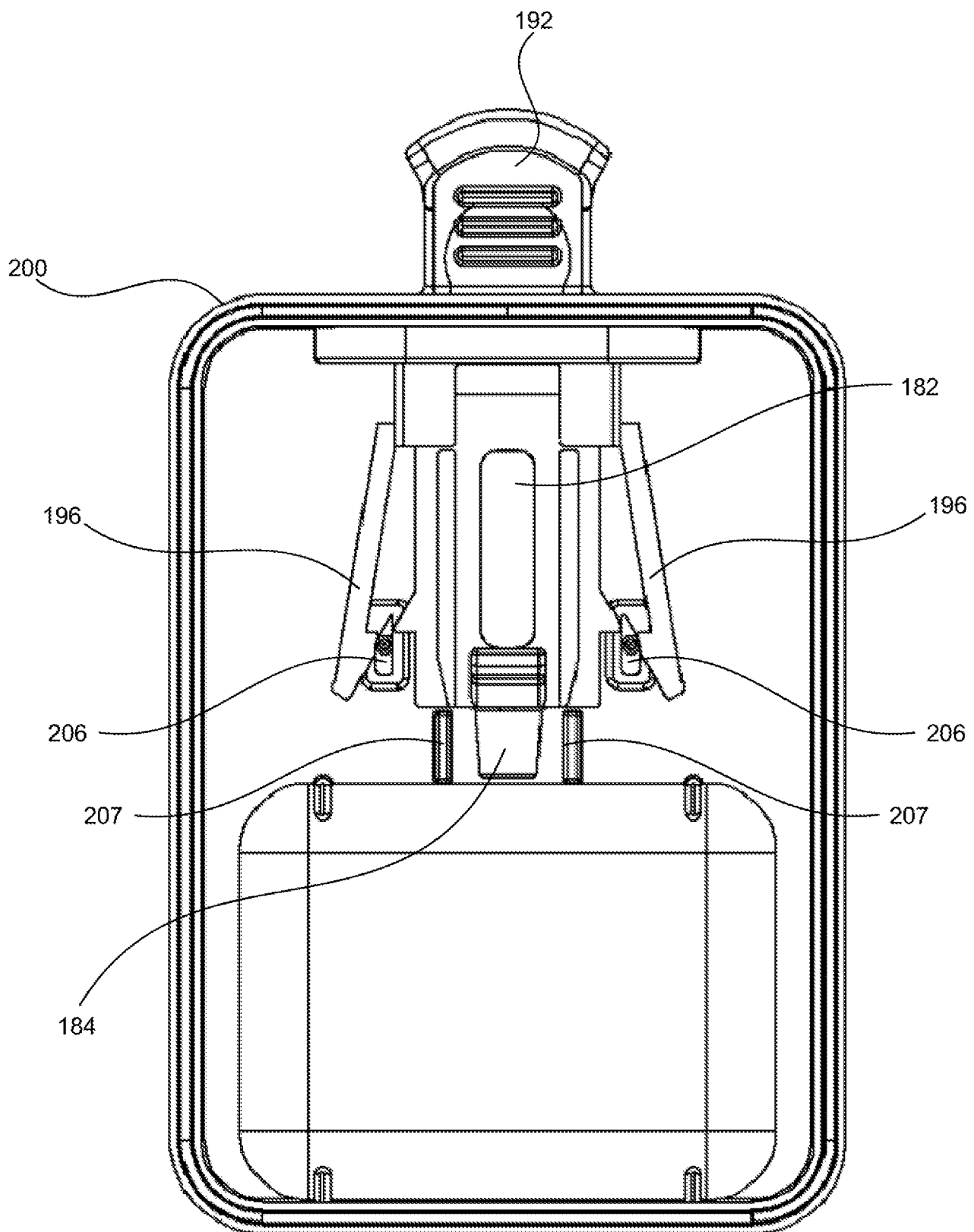


FIG. 24A

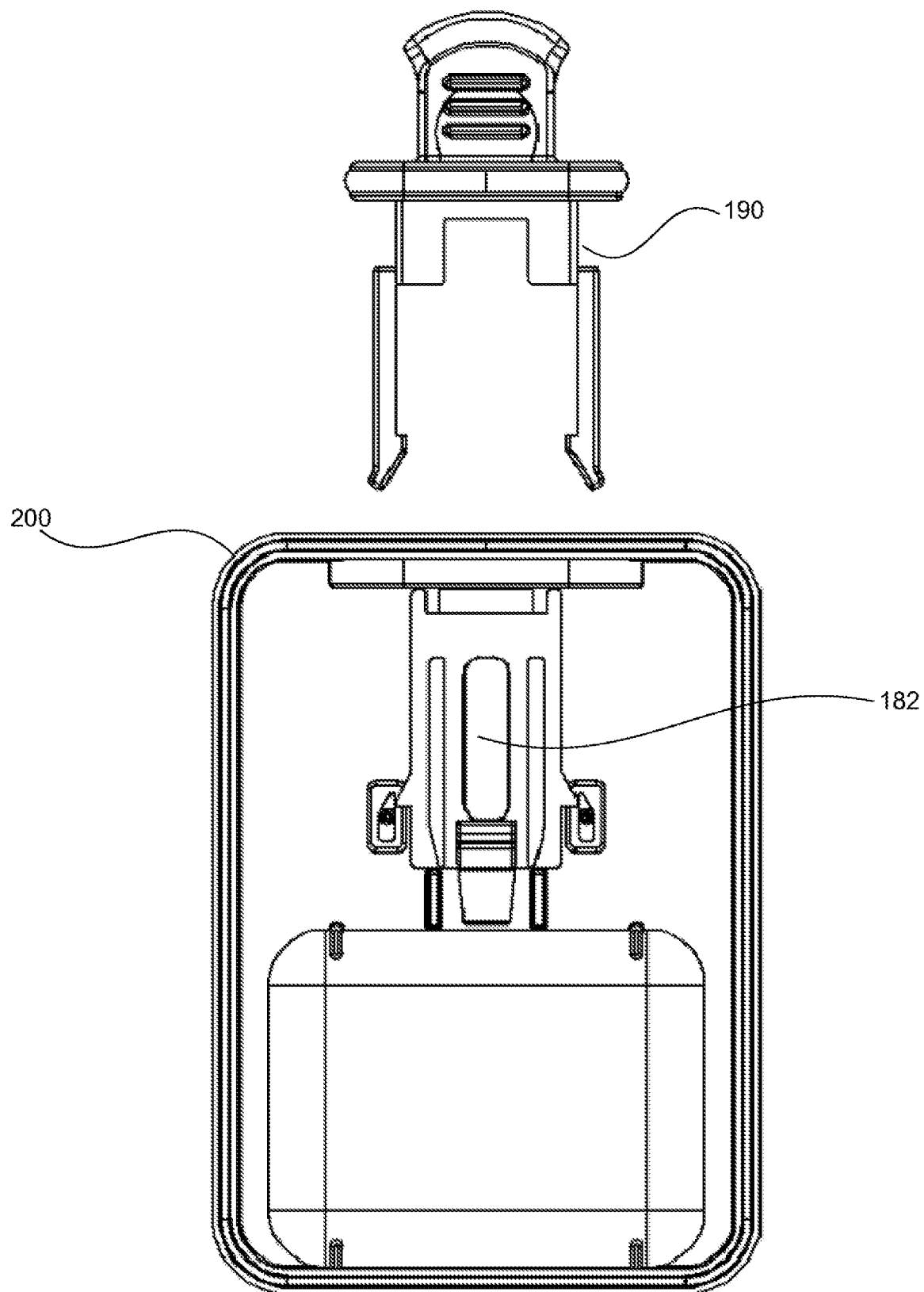


FIG. 24B

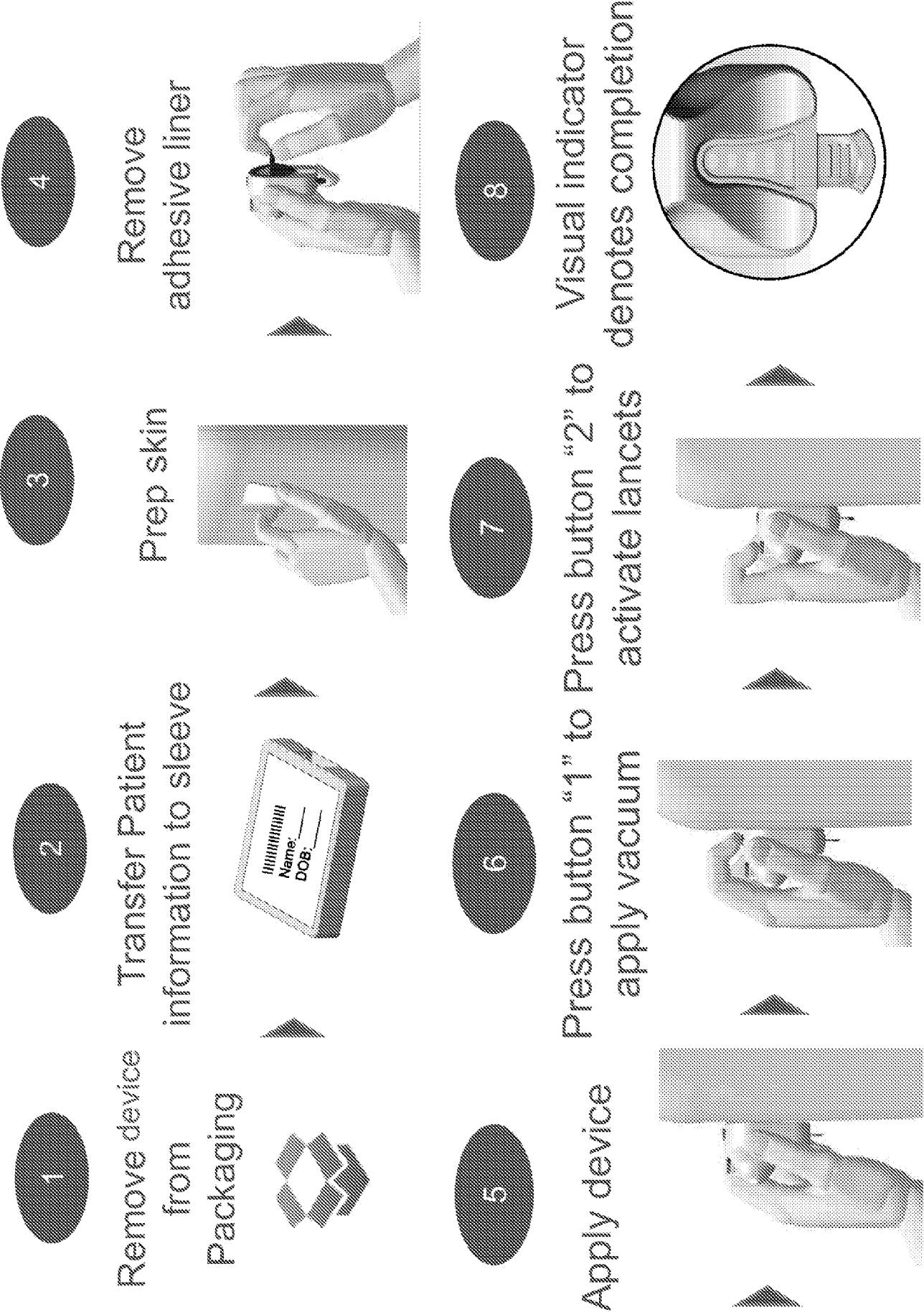


FIG. 25A

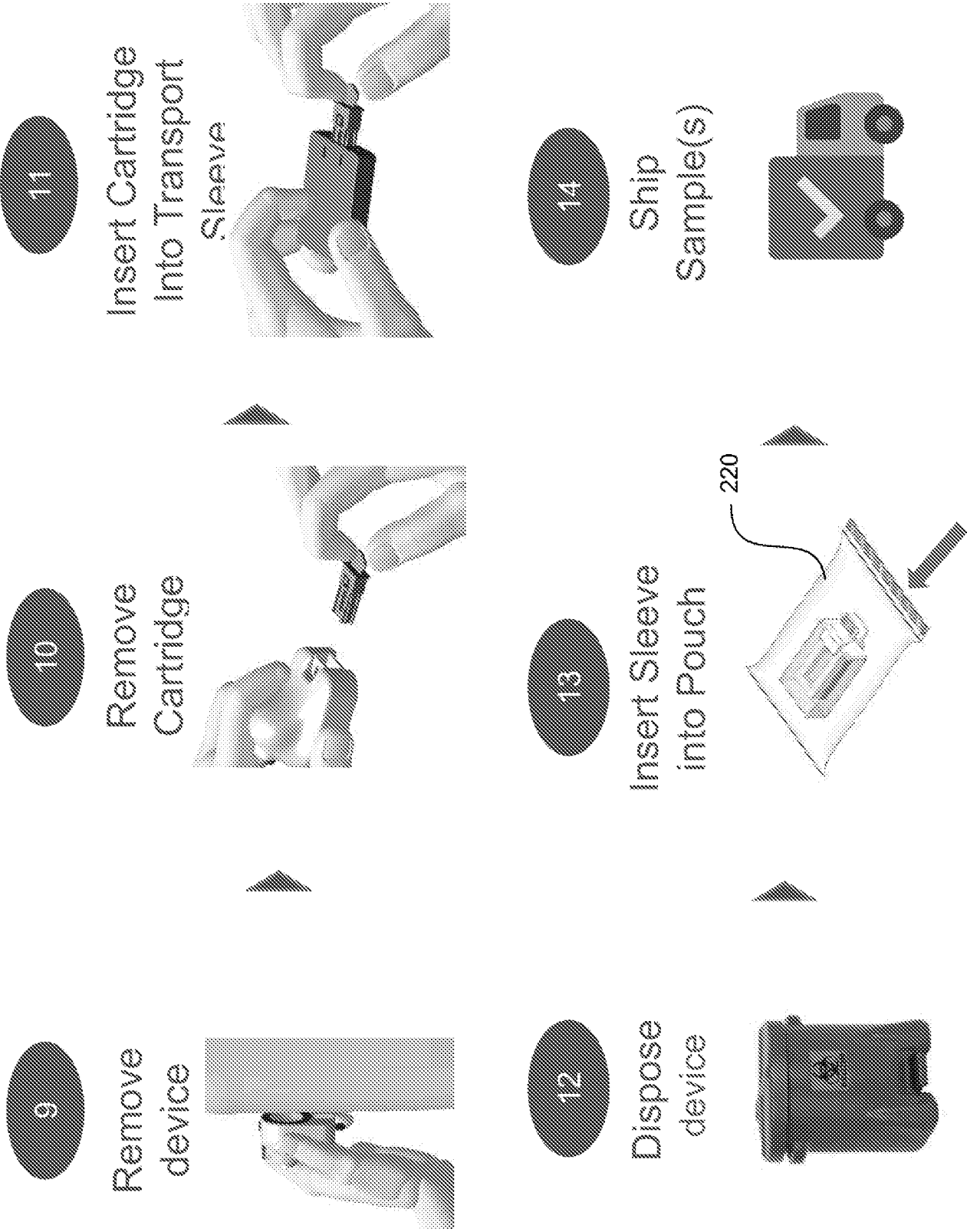


FIG. 25B

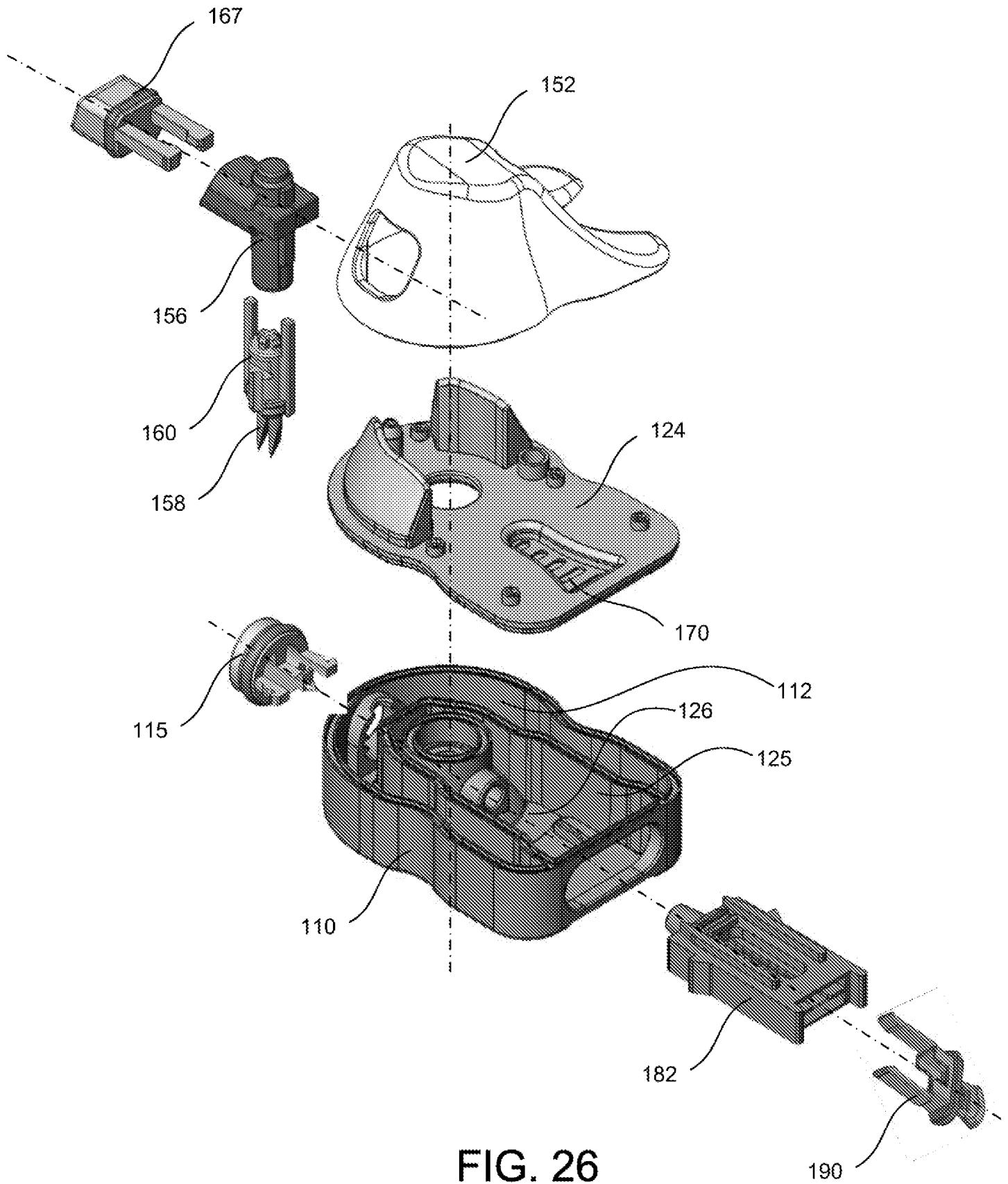


FIG. 26

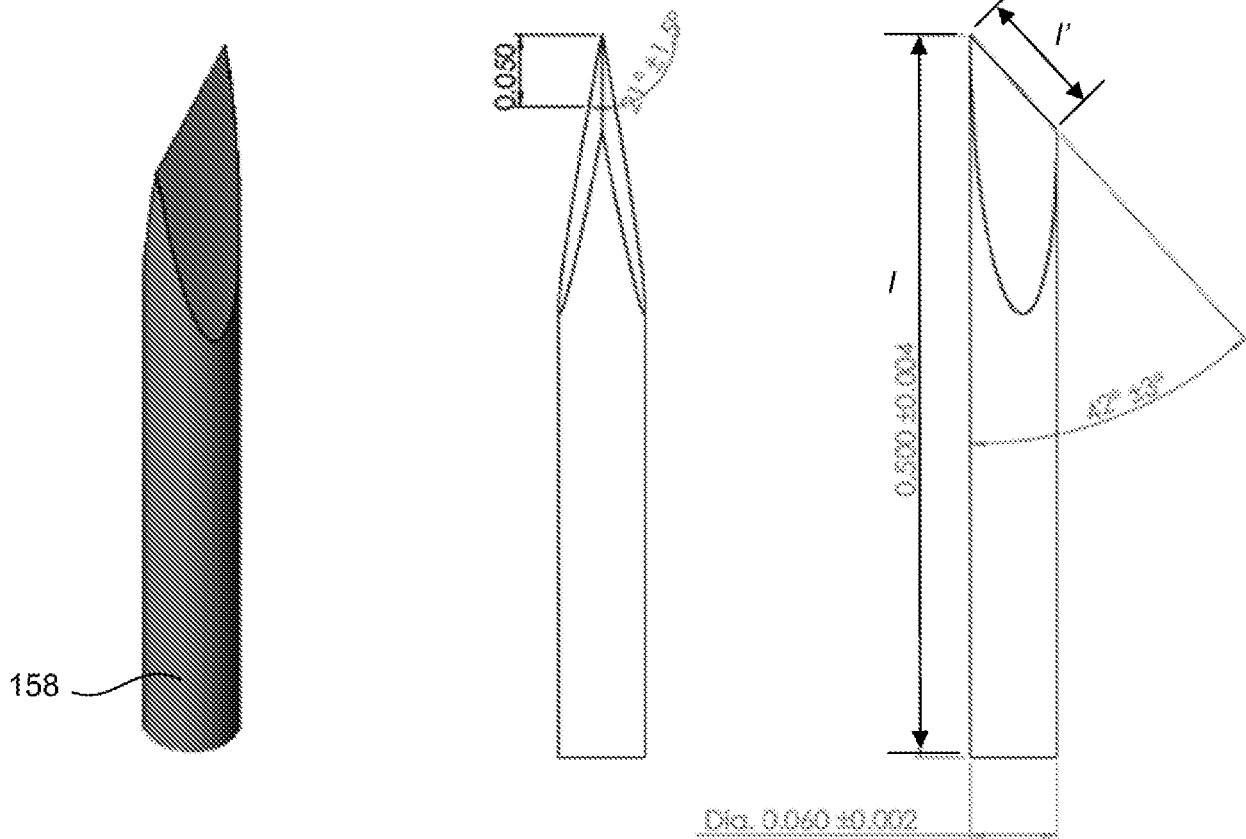


FIG. 27A

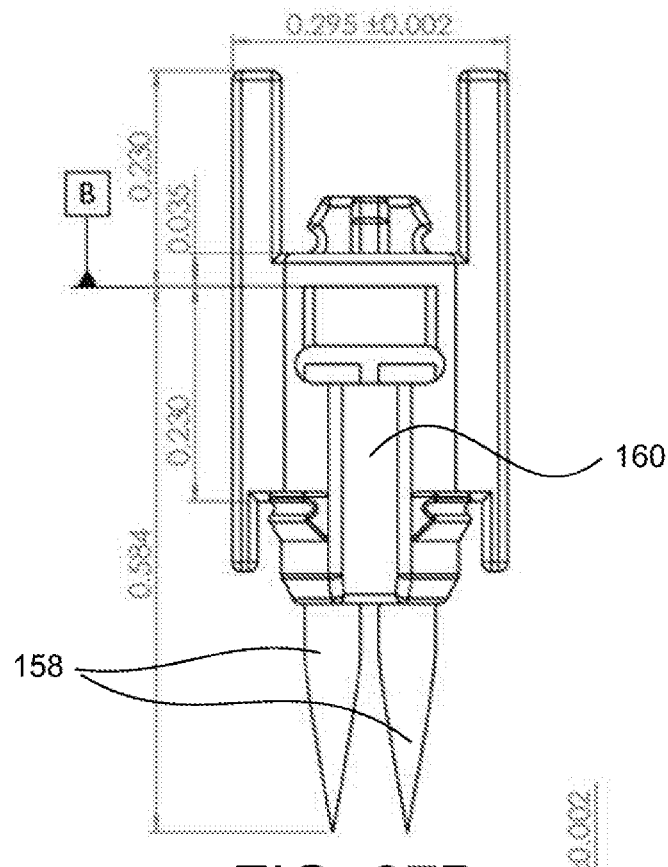


FIG. 27B

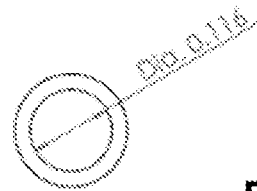
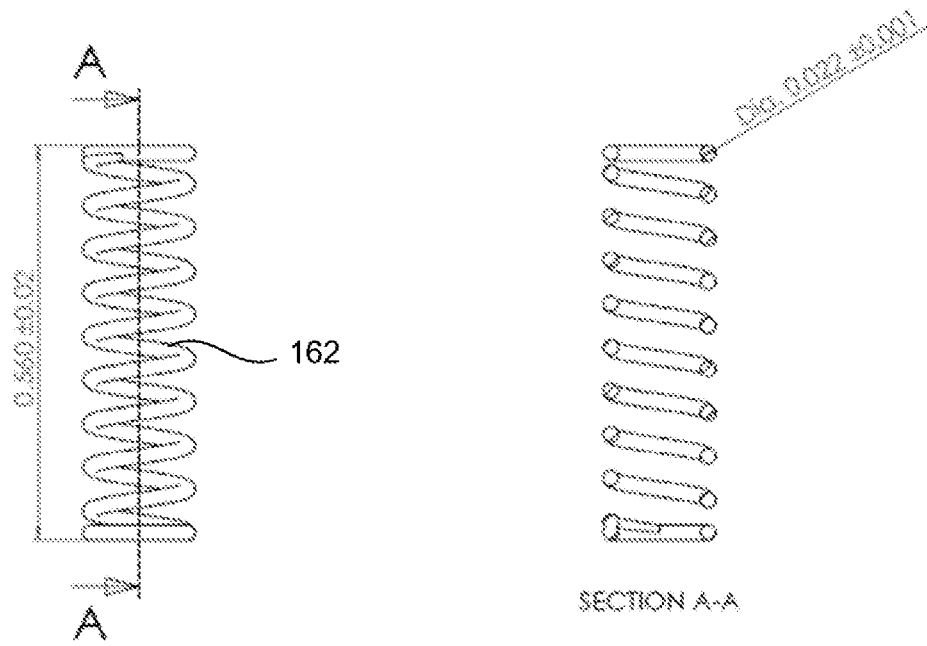


FIG. 28A

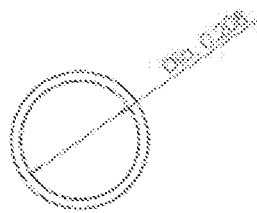
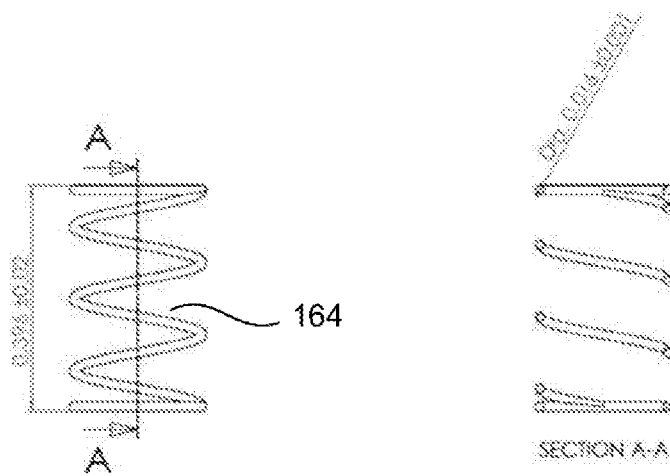


FIG. 28B

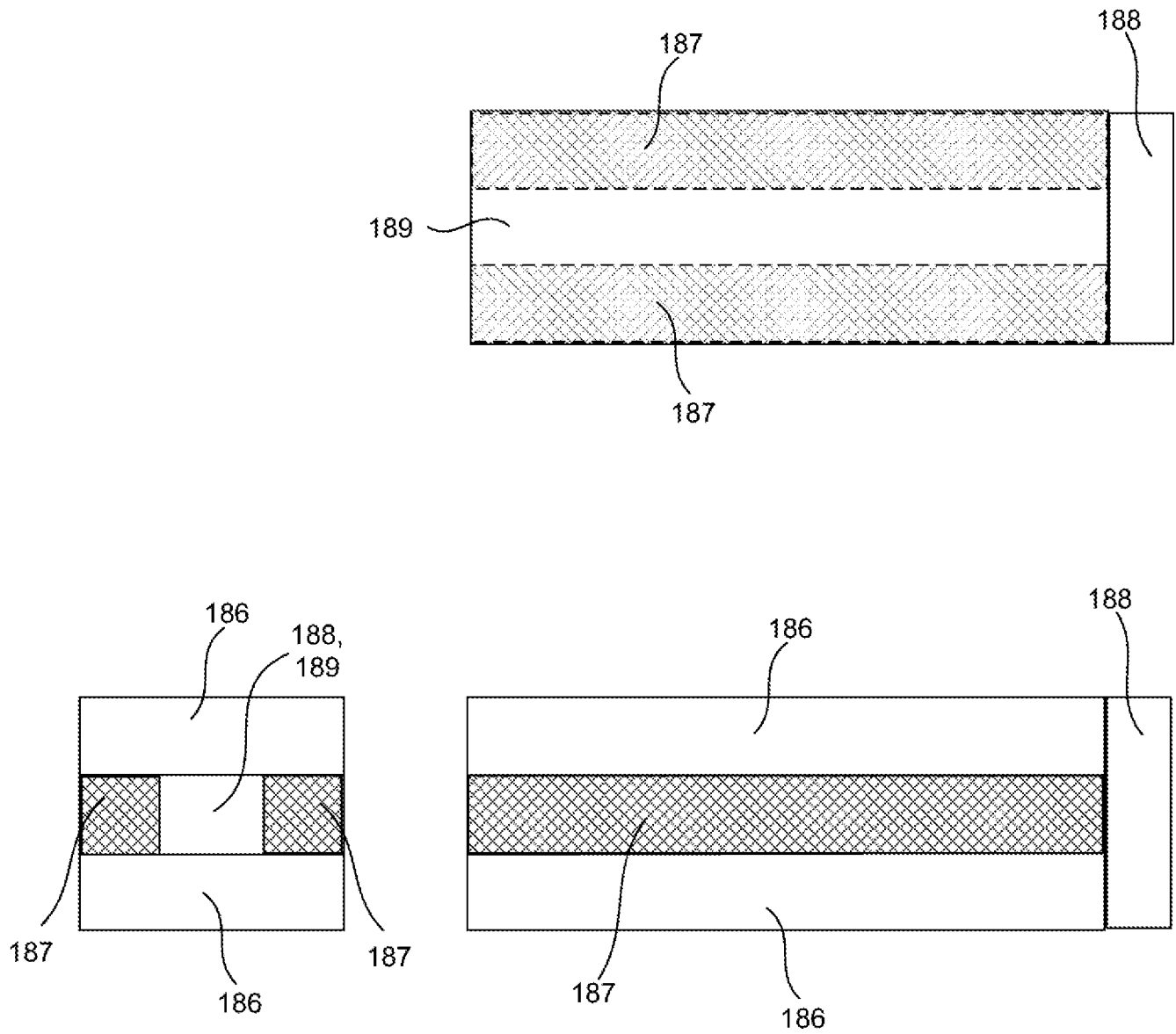


FIG. 29

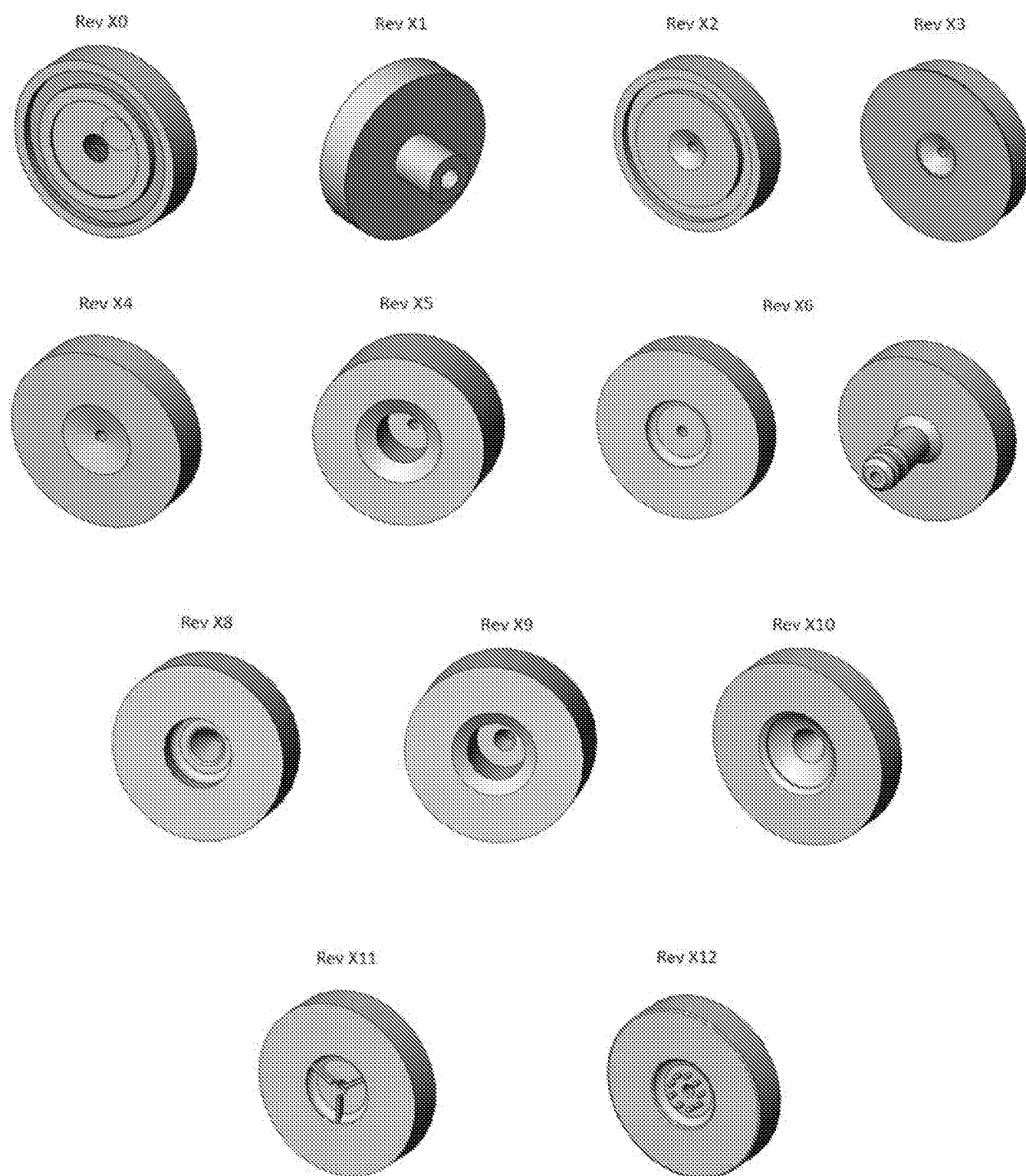
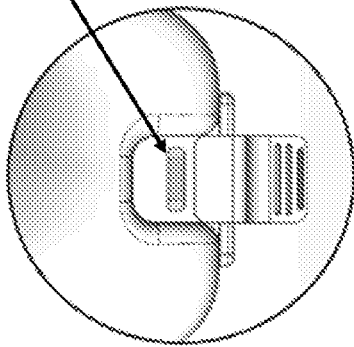


FIG. 30

FIG. 31C

Visual
Metering
Window



Clip-in Removable
Cartridge

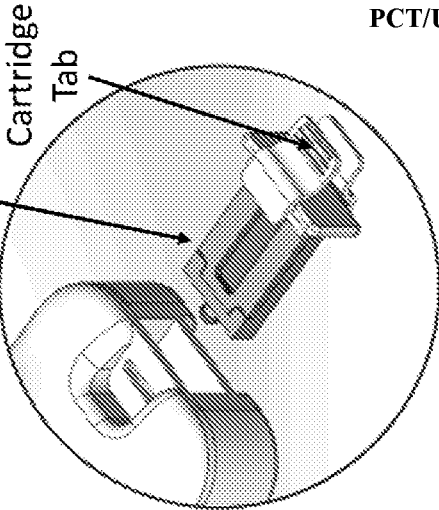


FIG. 31D

Visual Metering
Window

Vacuum
Button

Inner
diameter

Skin-vacuum /
lancing cavity

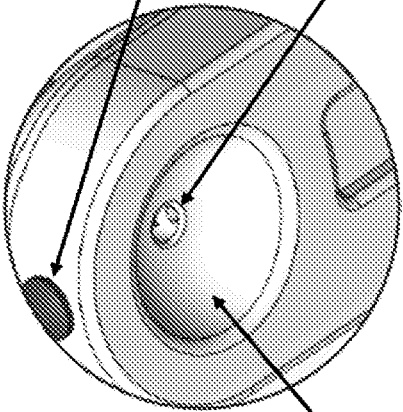
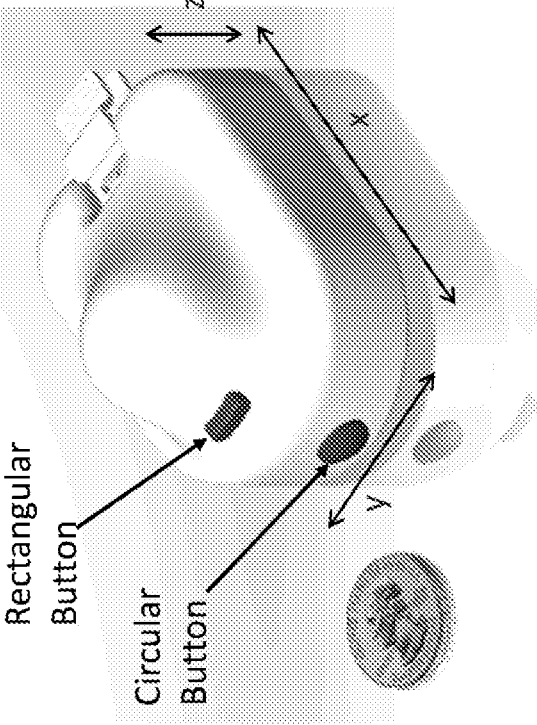


FIG. 31B

FIG. 31A



Rectangular
Button

Circular
Button

Full Device (2.5" x 1.75" x 1.65")

Concave
Cavity

FIG. 32A

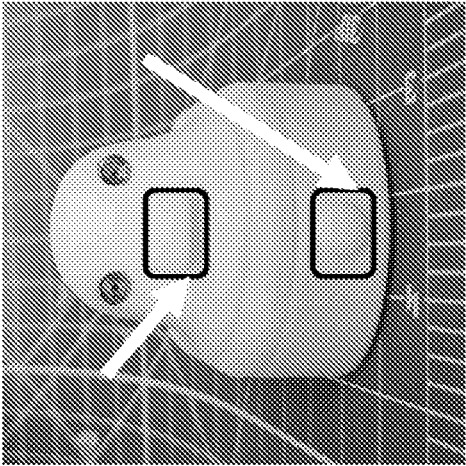


FIG. 32B

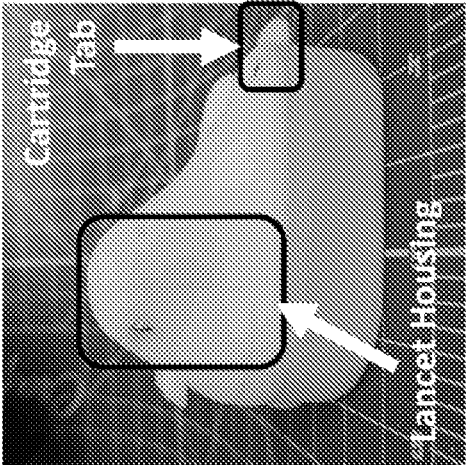


FIG. 32C

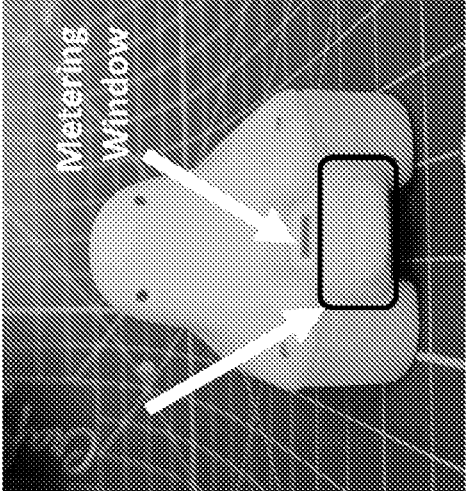


FIG. 32D

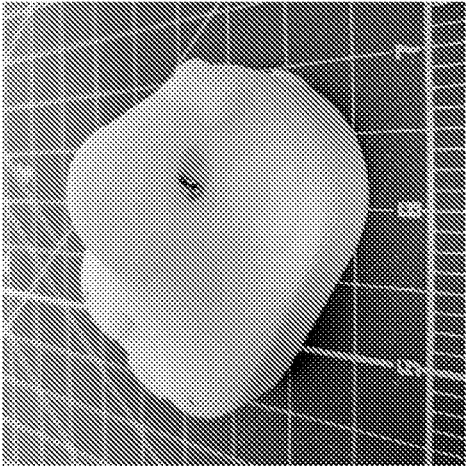


FIG. 33B

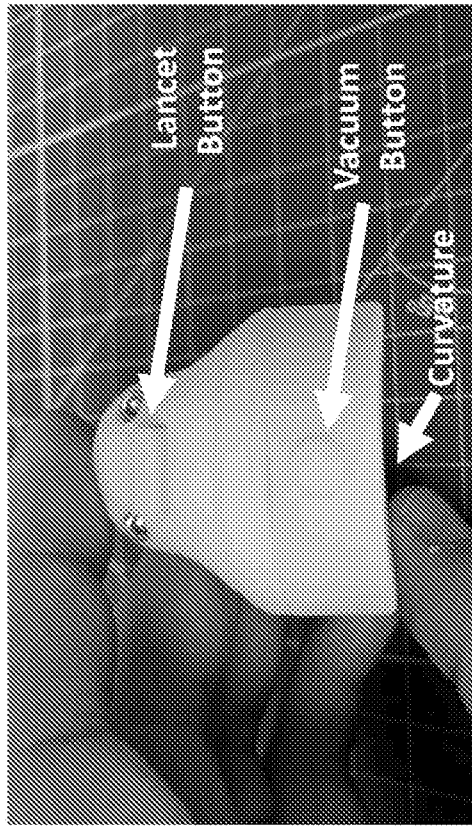
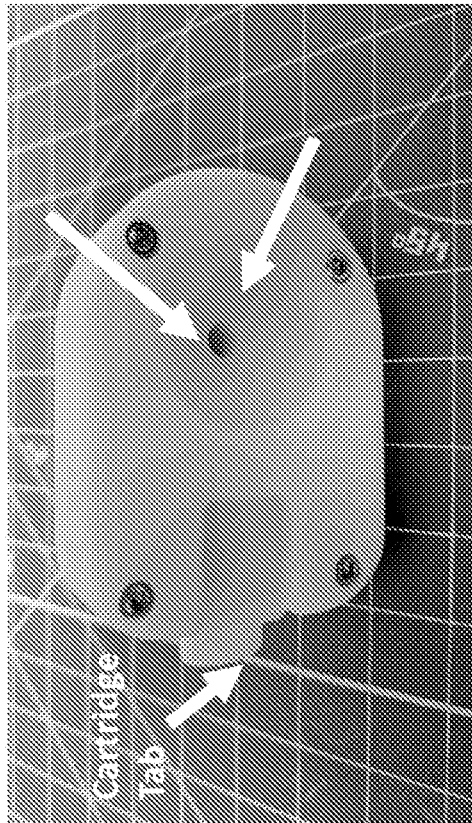


FIG. 33A



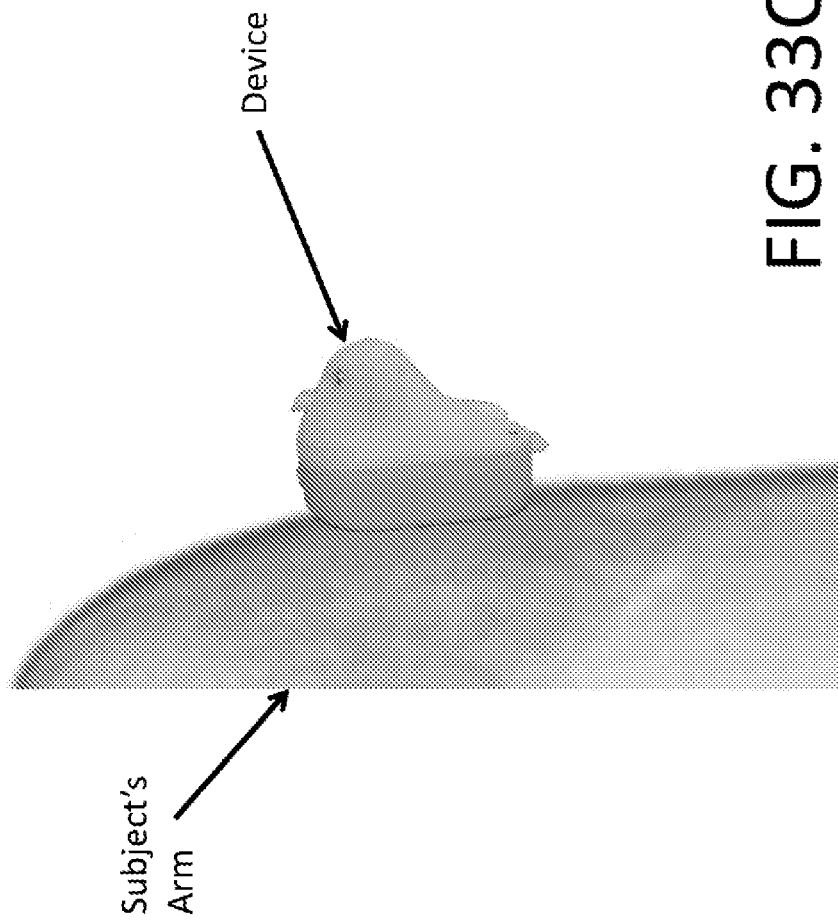


FIG. 33C

FIG. 34A

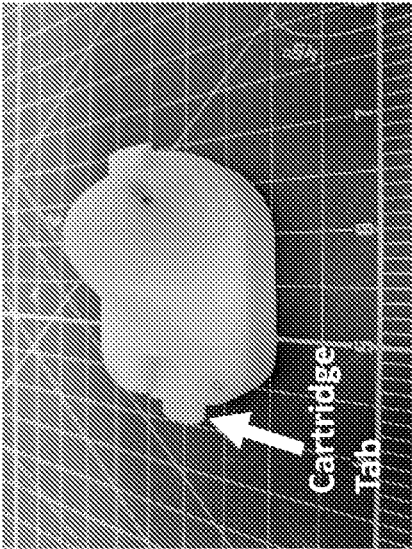


FIG. 34B

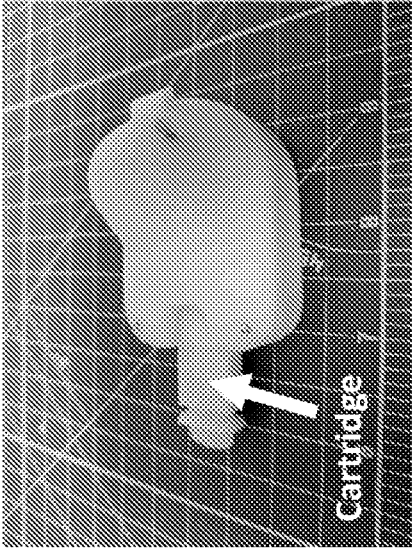


FIG. 34D

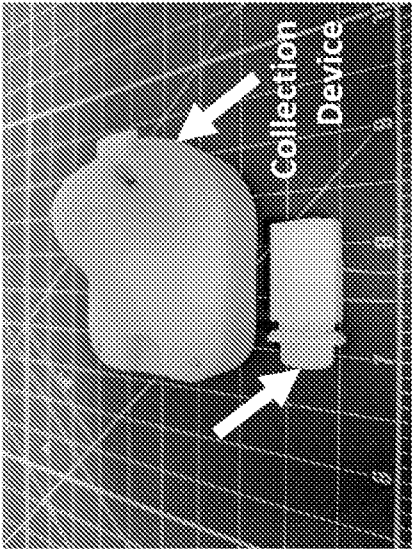
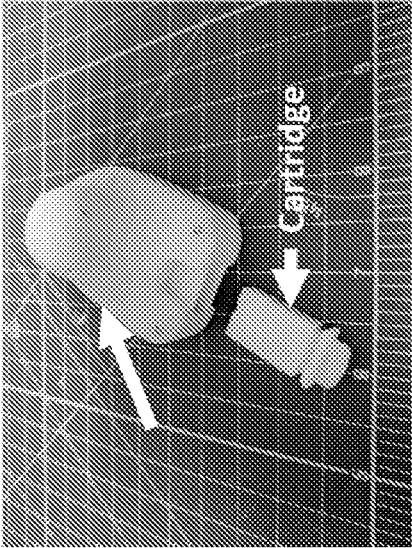


FIG. 34C



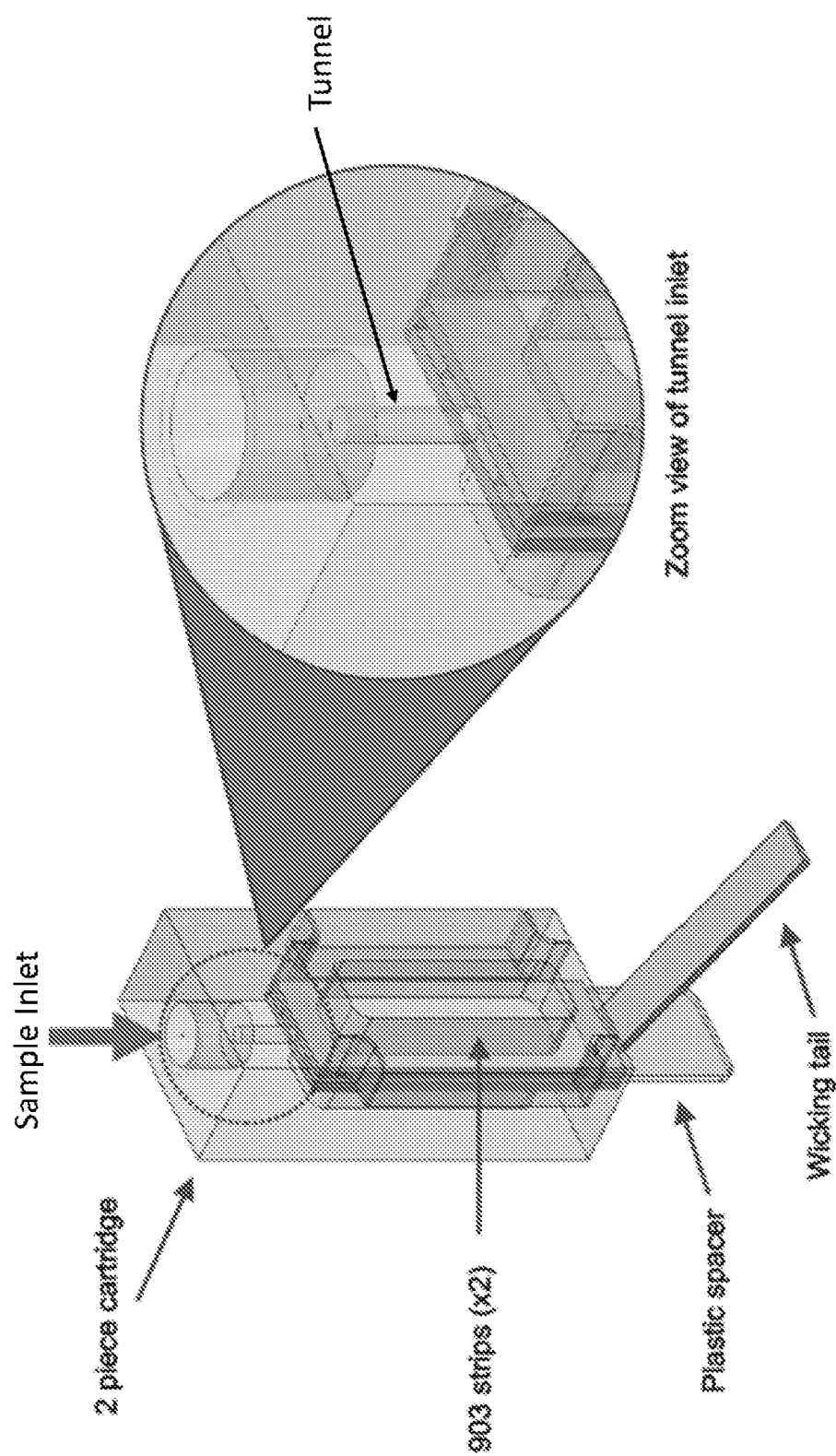


FIG. 35

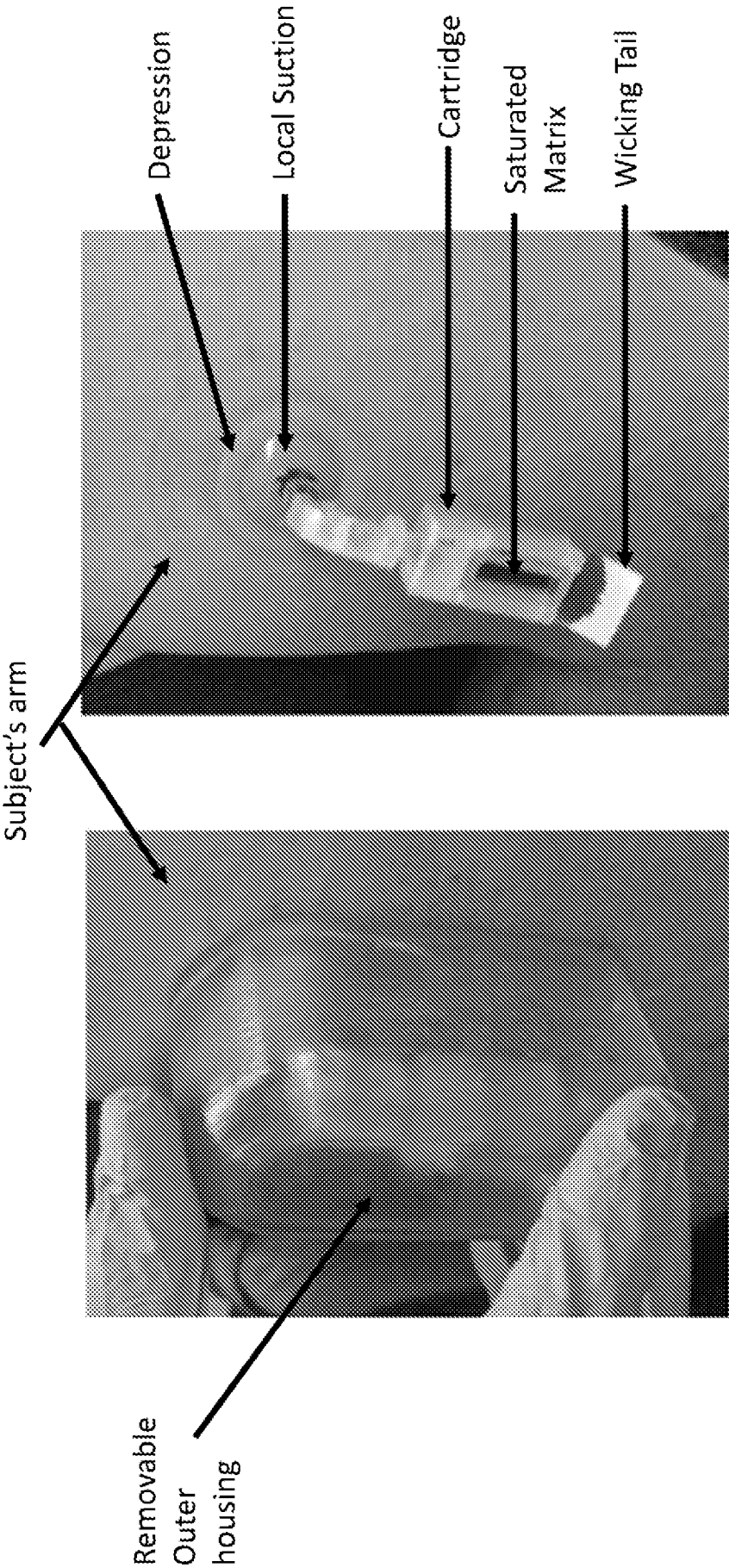


FIG. 36A

FIG. 36B

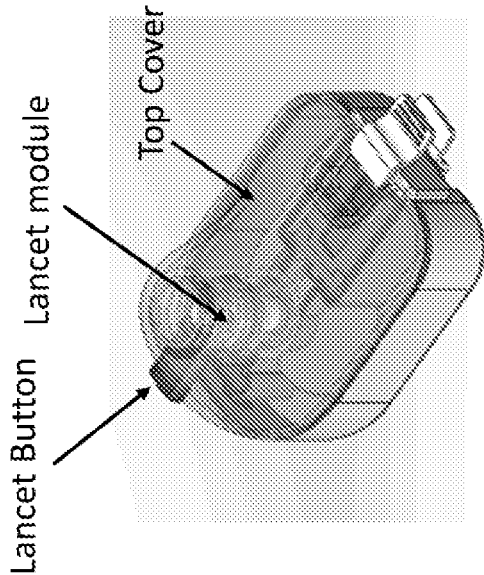


FIG. 37A

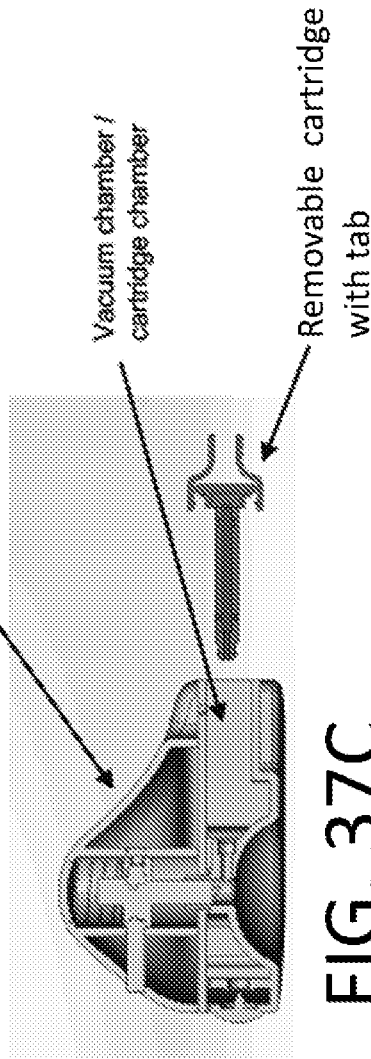


FIG. 37C

- Modular Design**
1. Top Cover / Lancet module
 2. Vacuum chamber / cartridge chamber
 3. Deposition cartridge

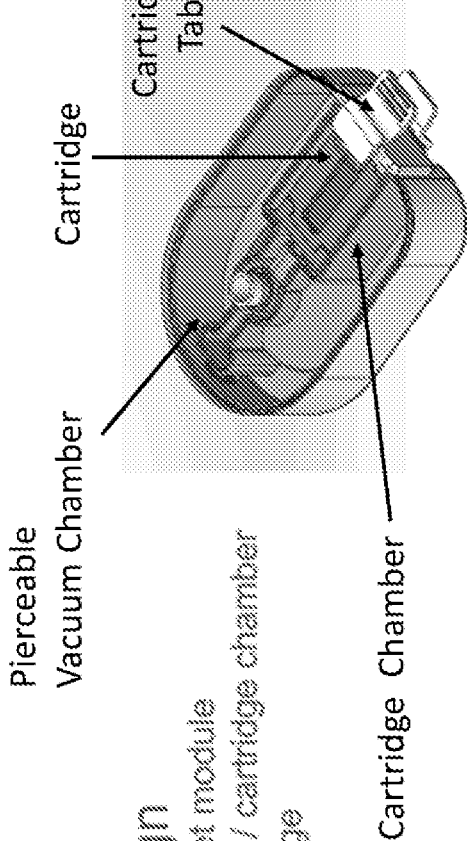


FIG. 37B

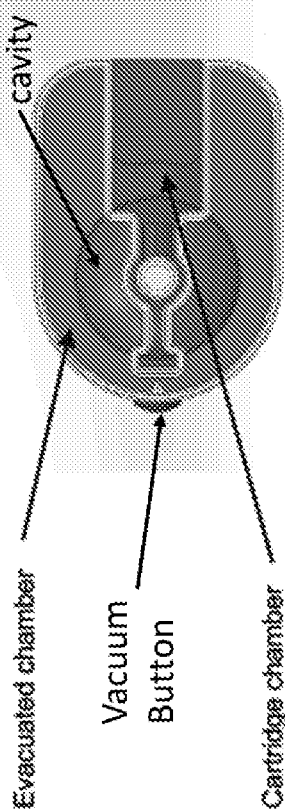


FIG. 37D

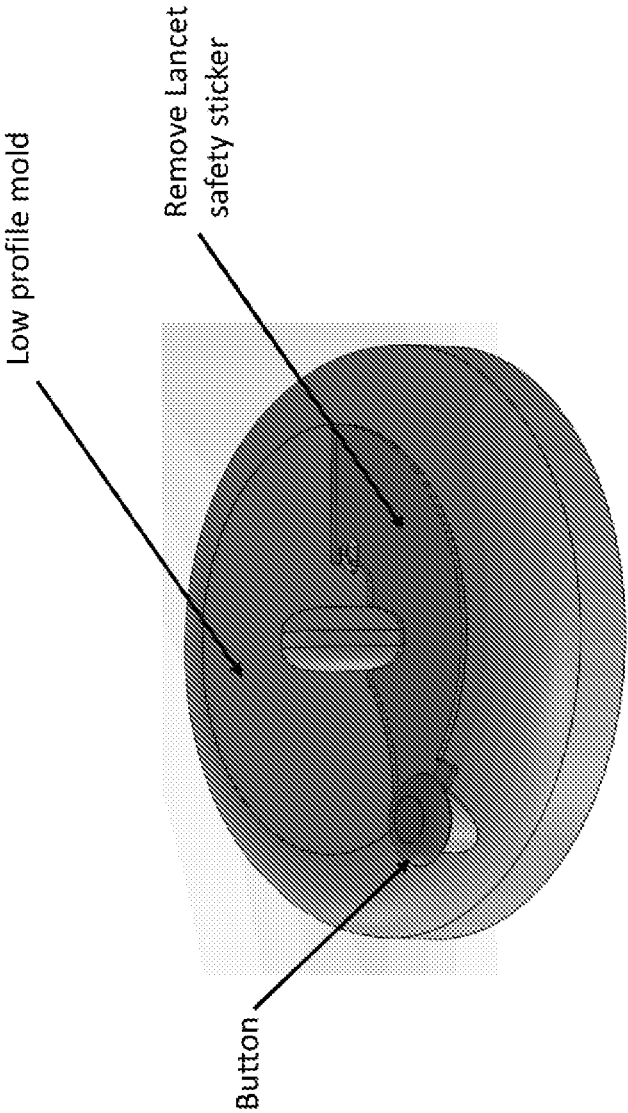
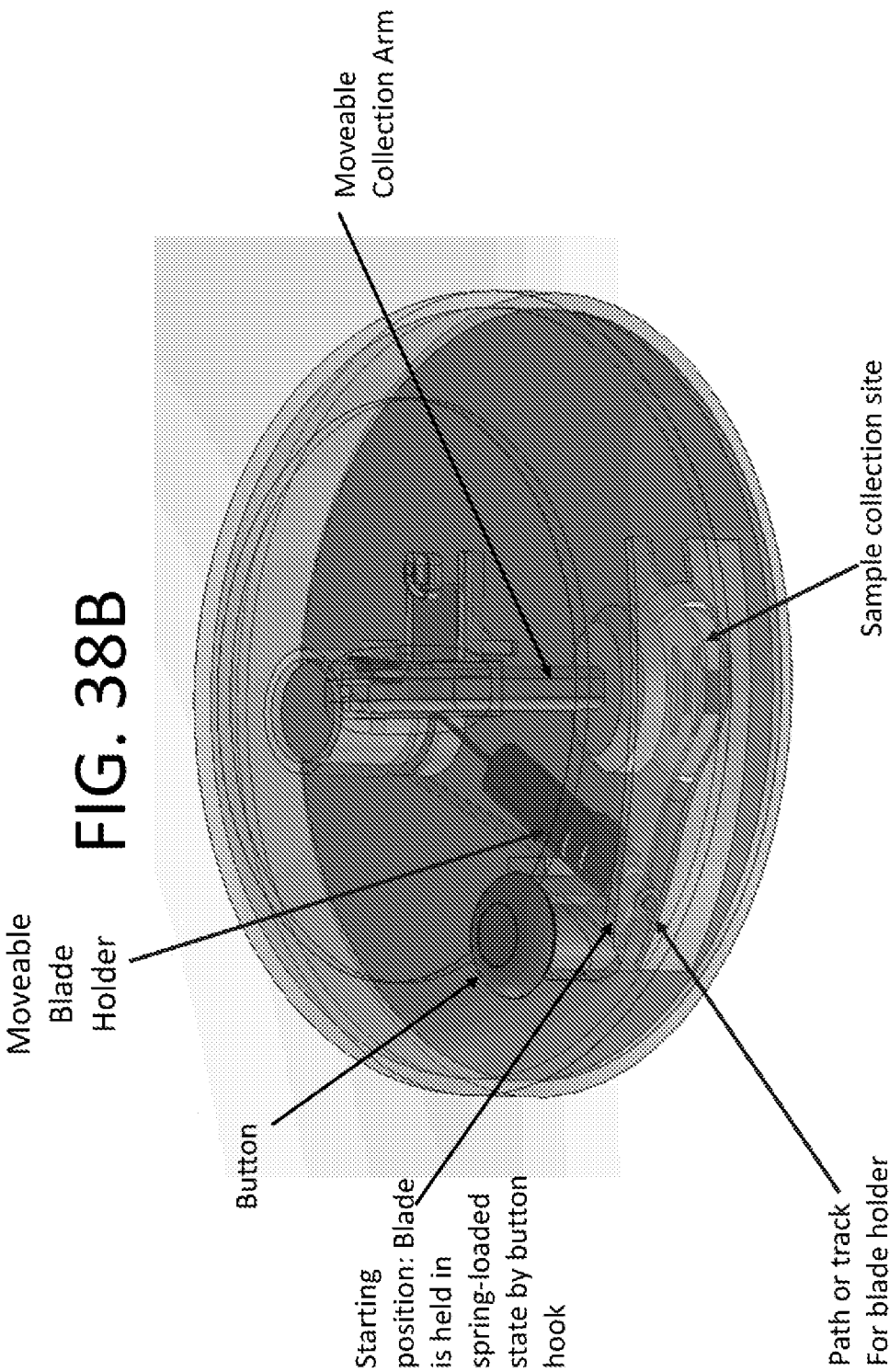


FIG. 38A

10



11

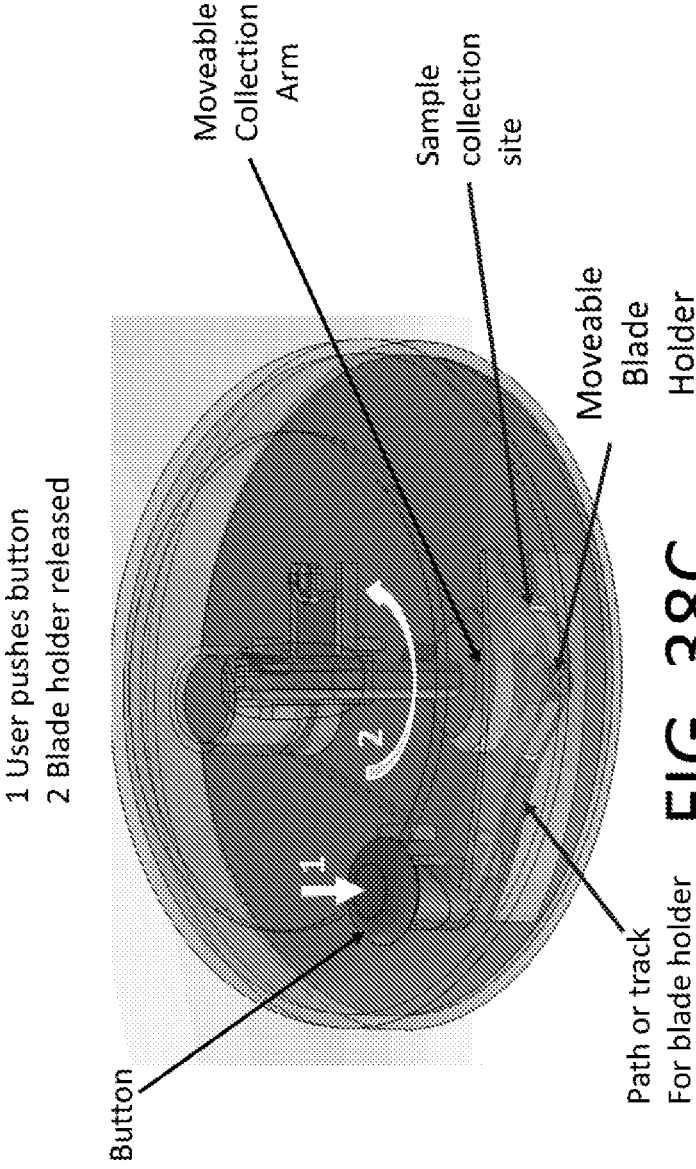
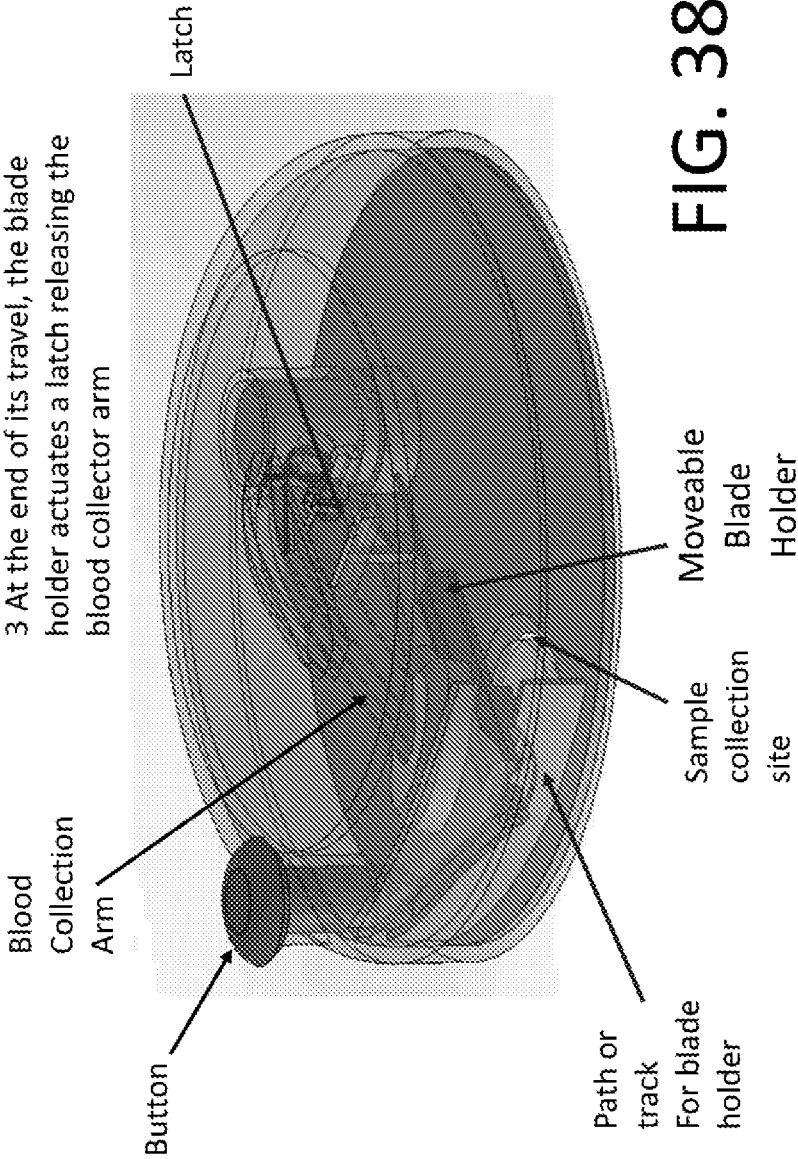
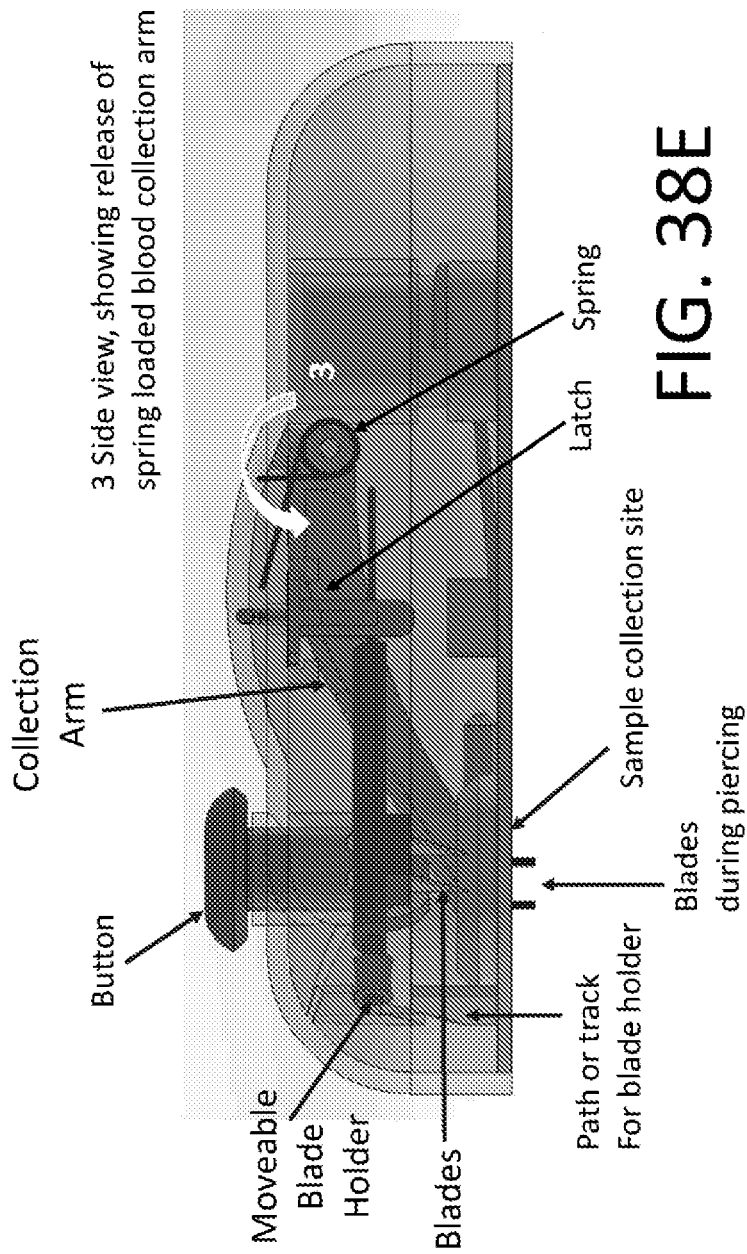


FIG. 38C

12



13



14

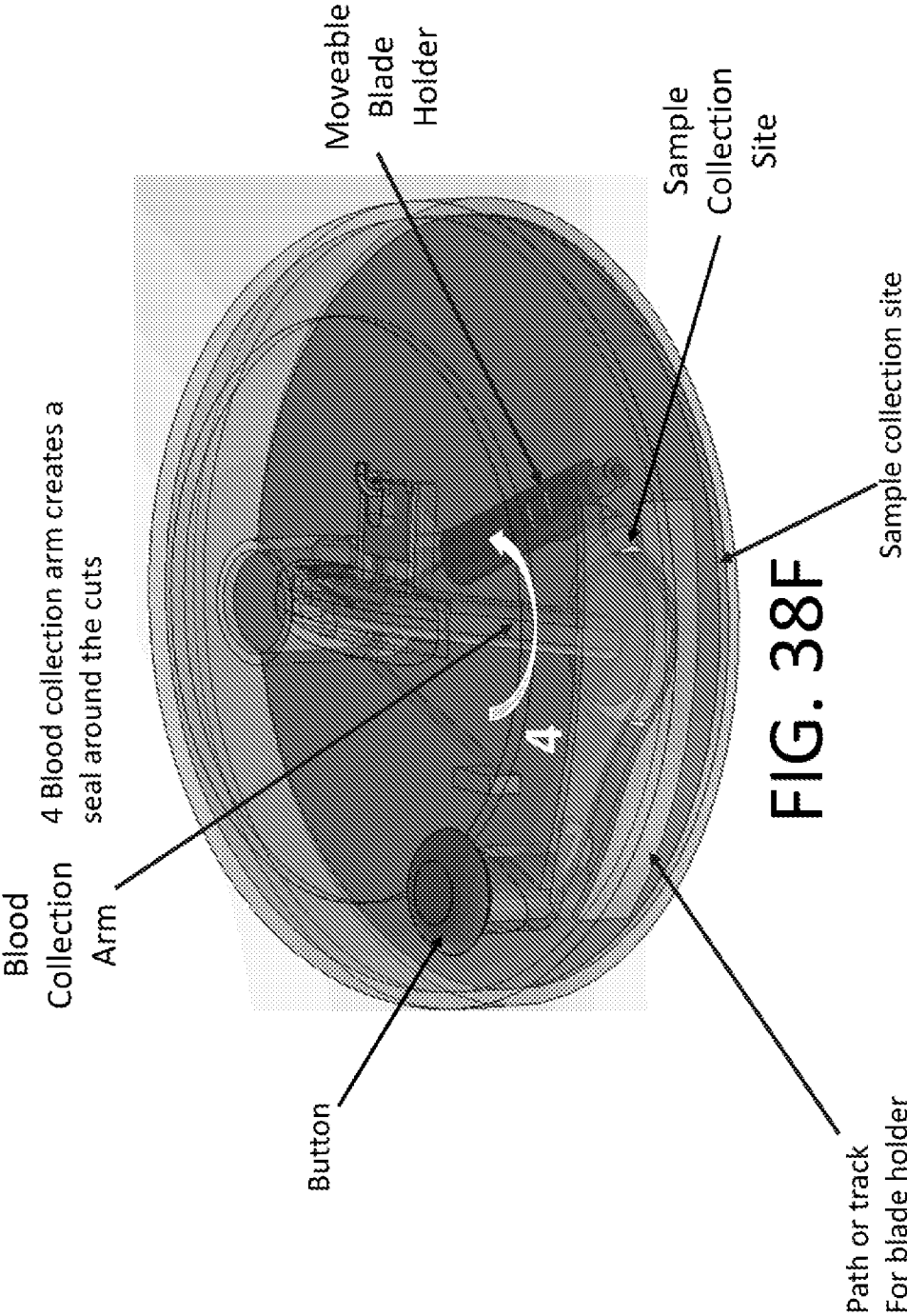


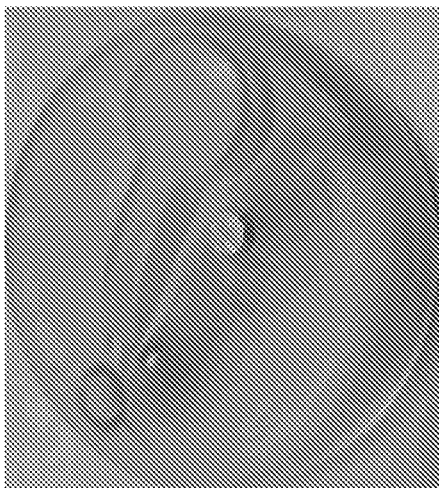
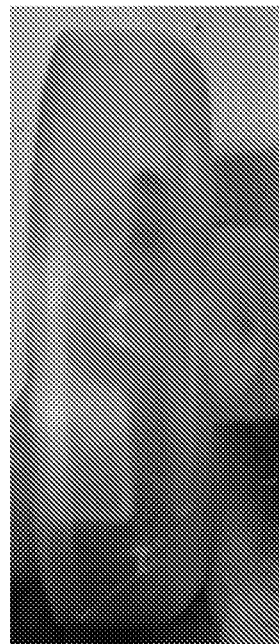
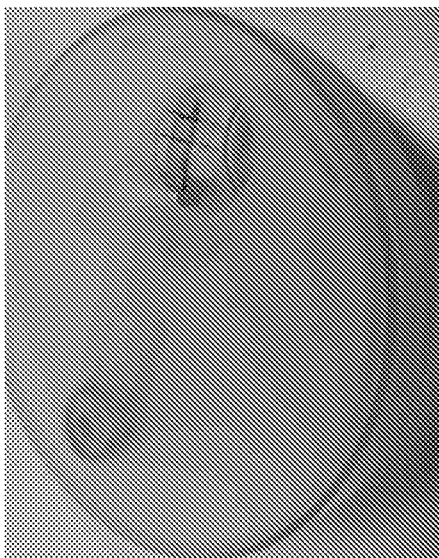
FIG. 39A_{Top}FIG. 39B_{Bottom}FIG. 39C_{Side}

FIG. 39E

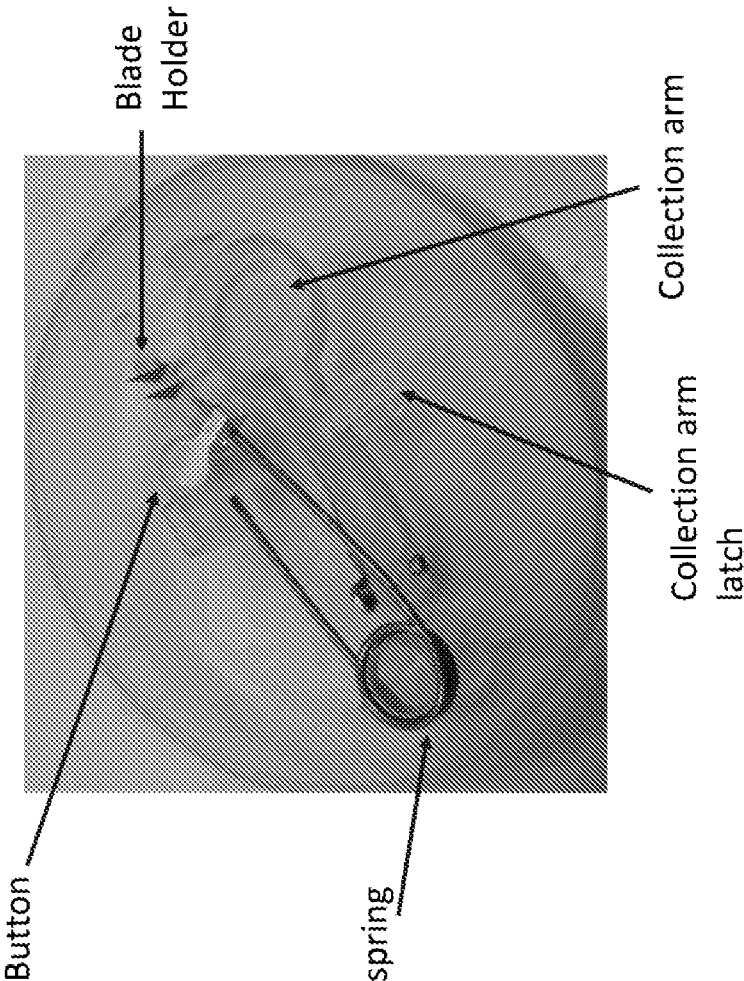
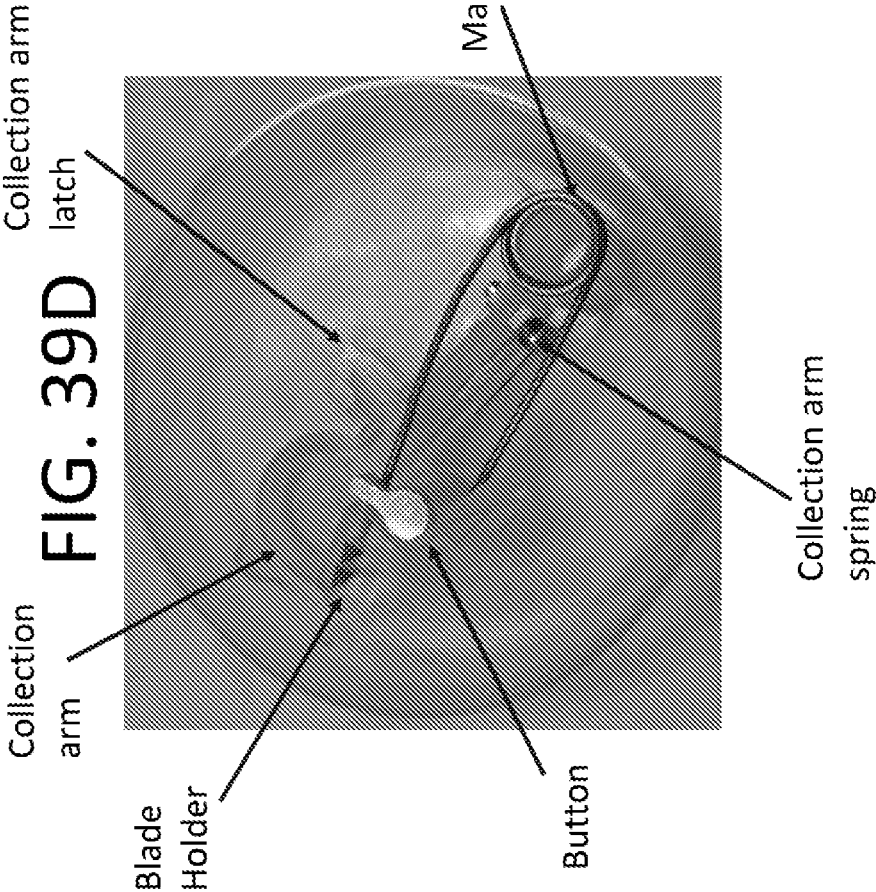
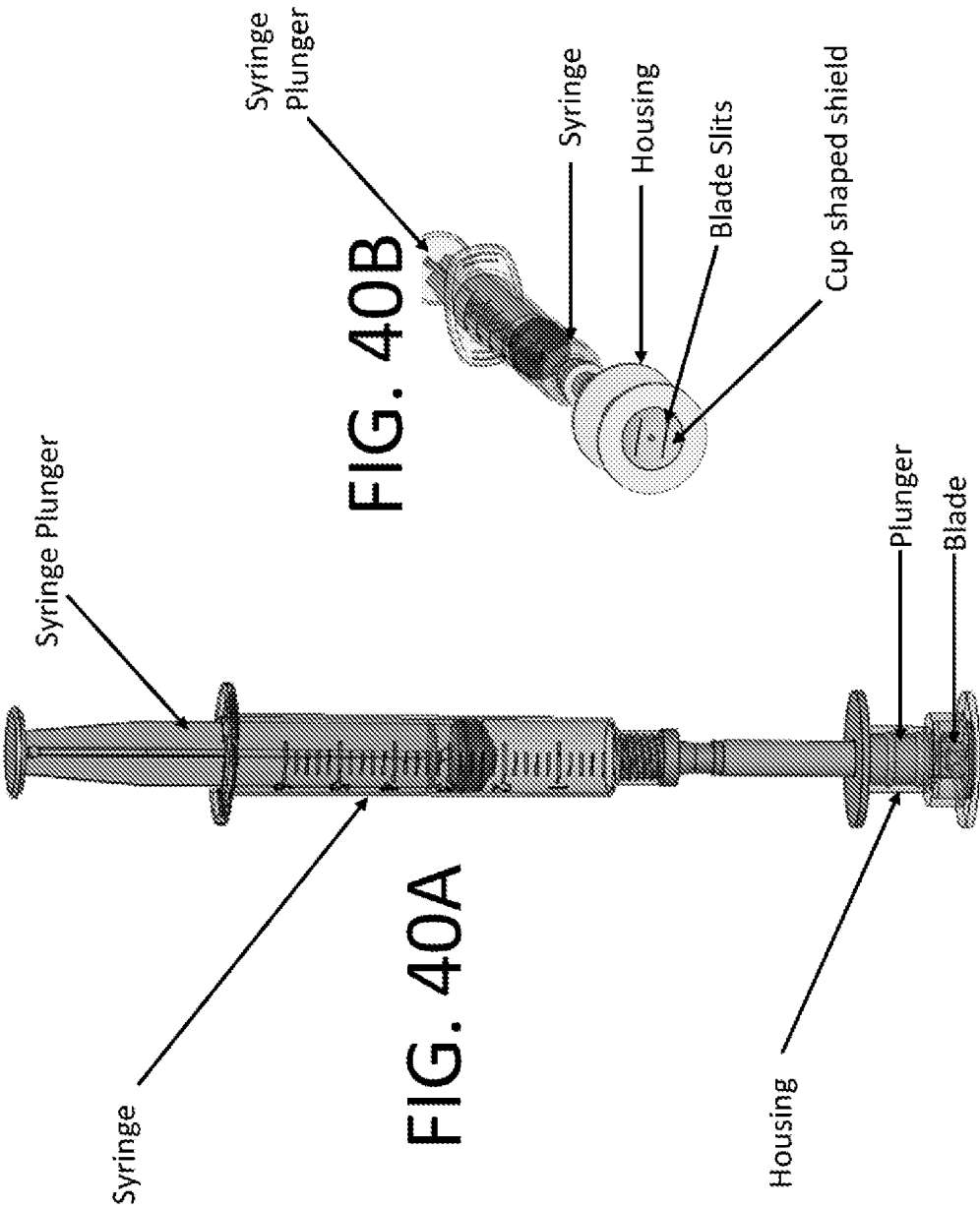
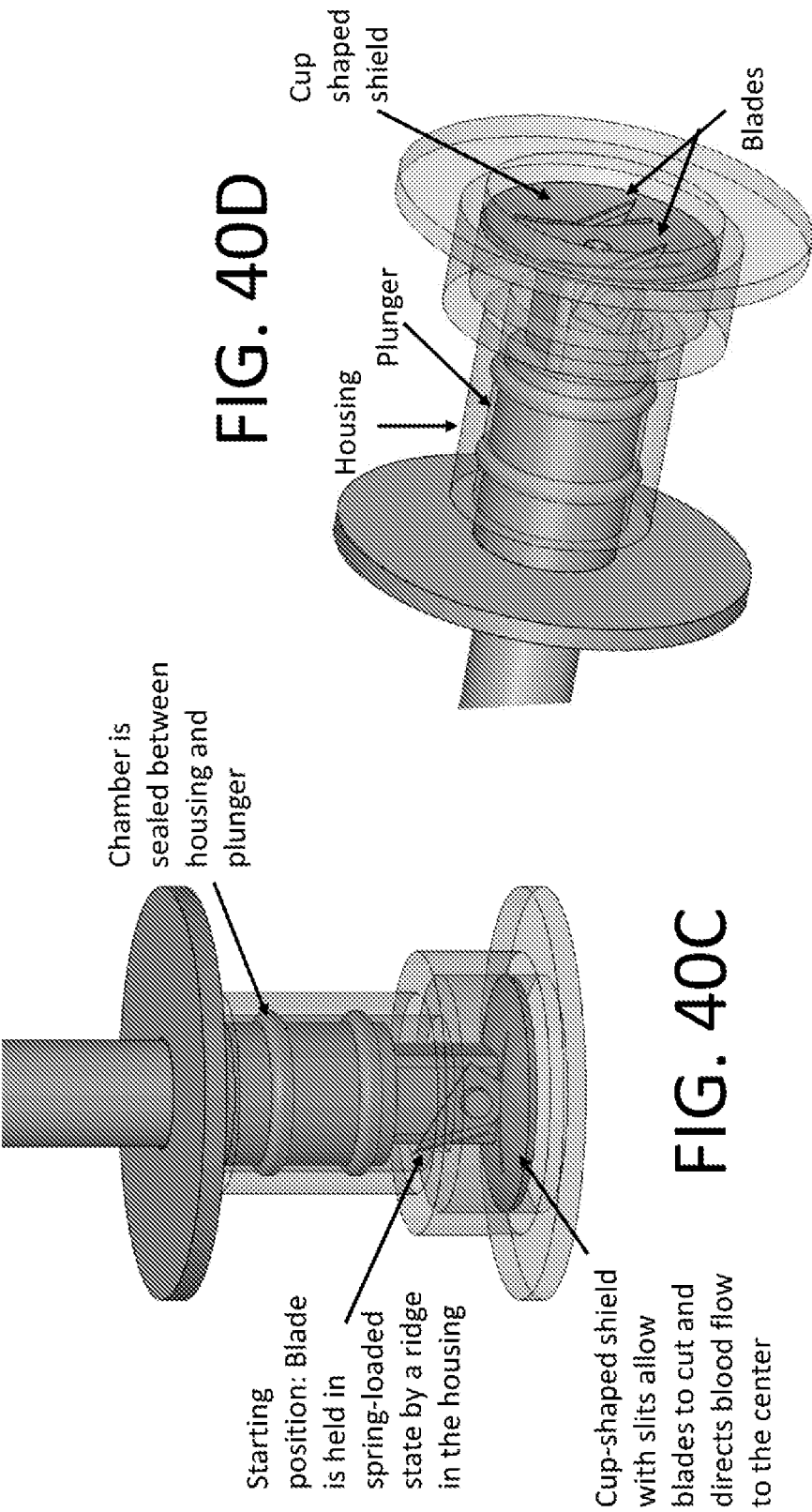


FIG. 39D







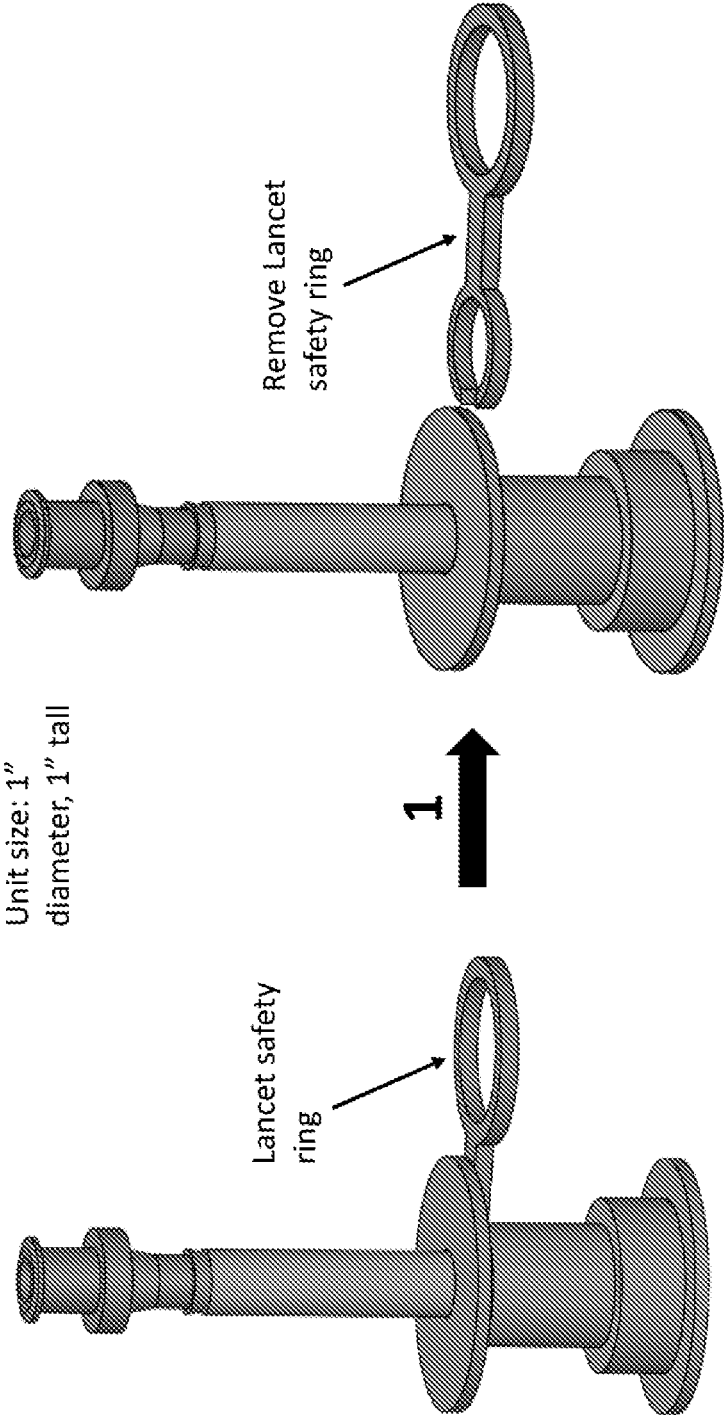


FIG. 41A

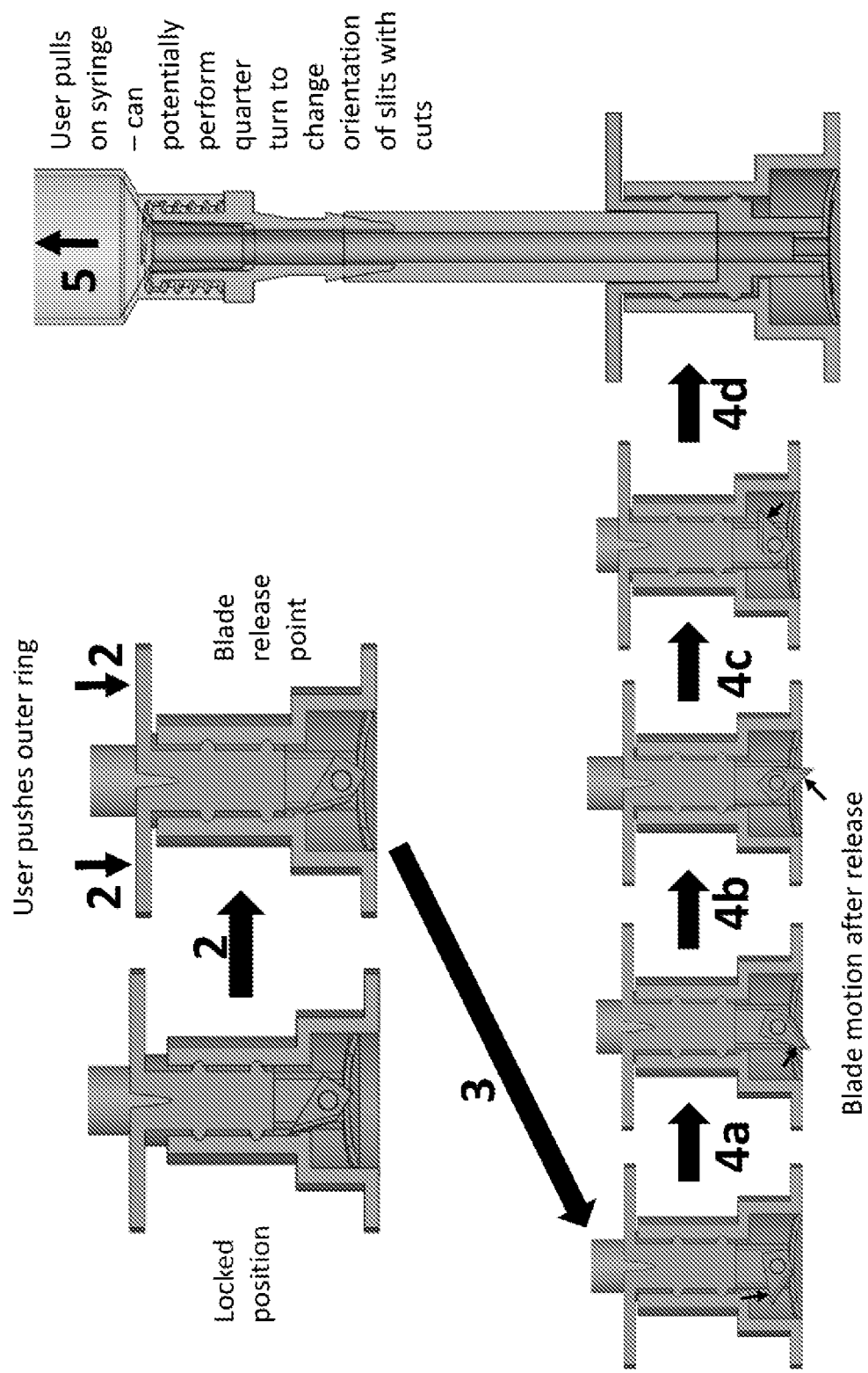


FIG. 41B

FIG. 42B

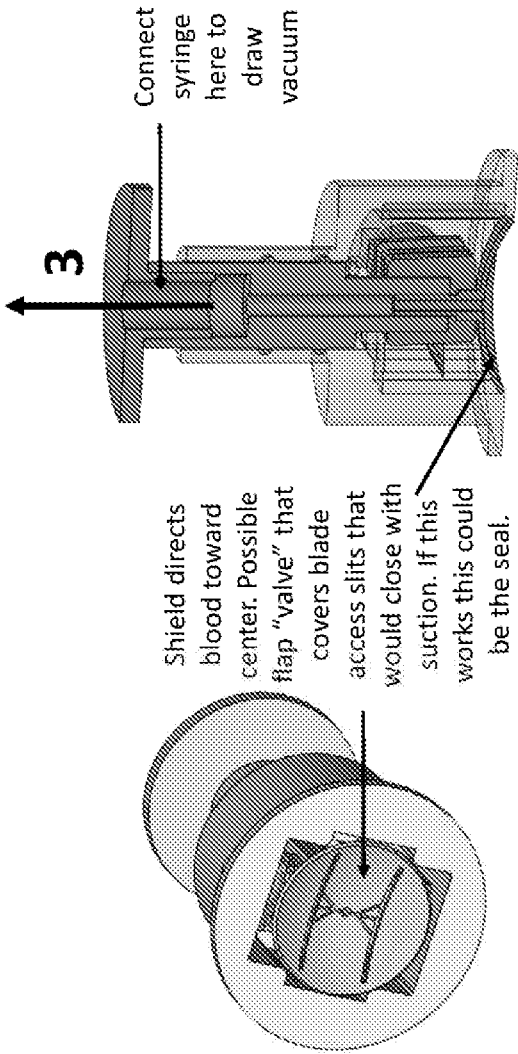
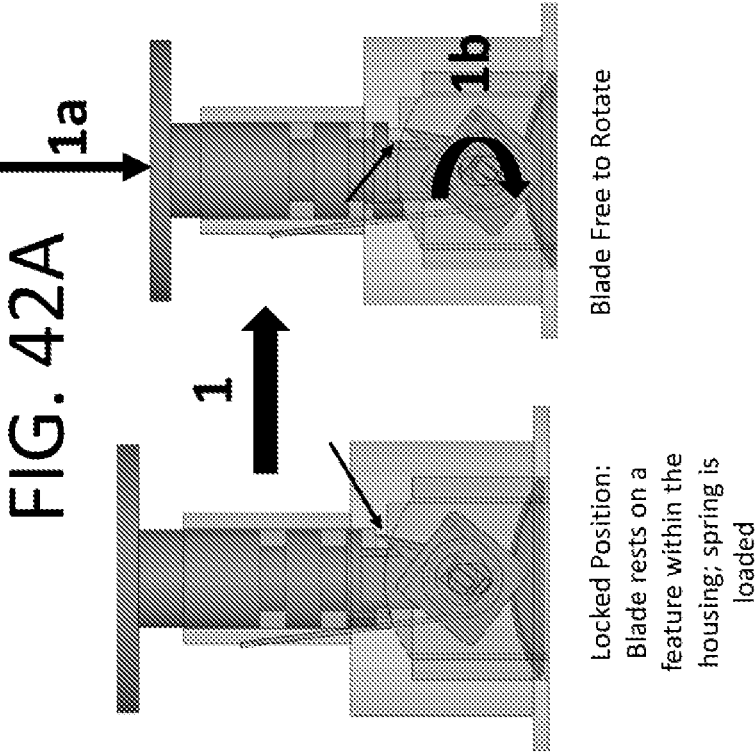
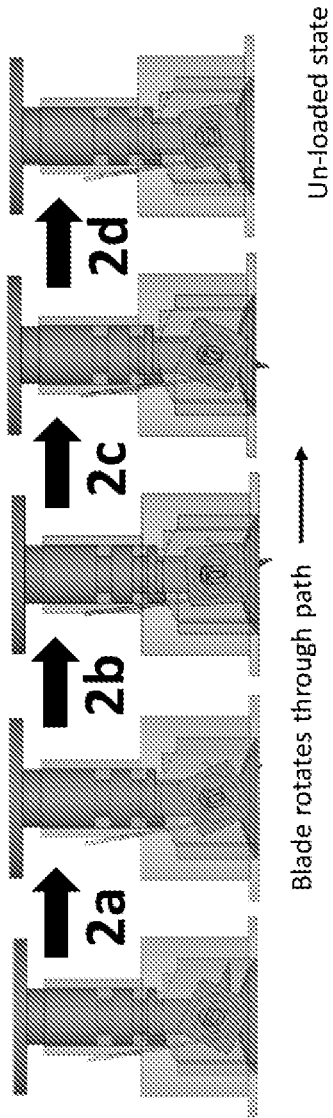


FIG. 42C

2 mm D x 1.5 mm W cut
Contact-activated plunge

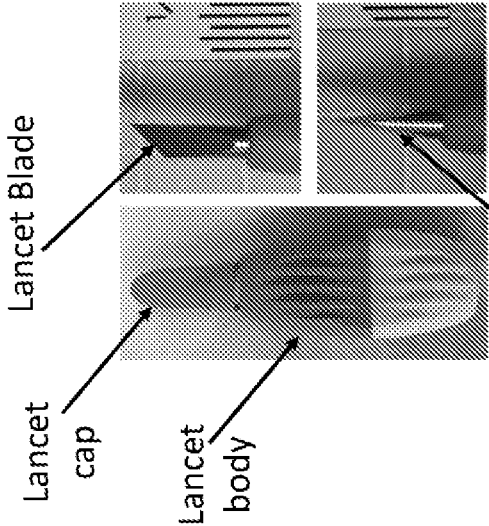


FIG. 43A

BD High-Flow
Lancet

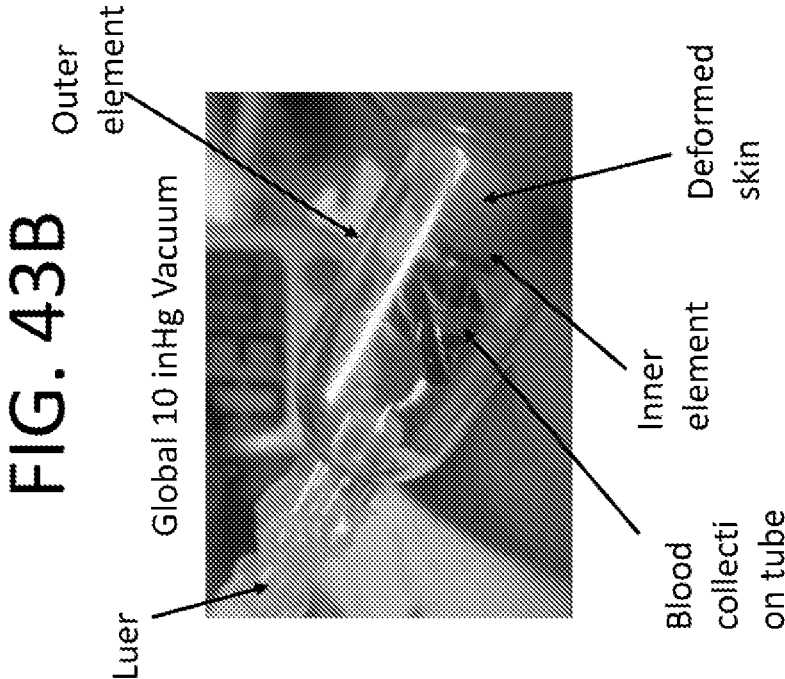
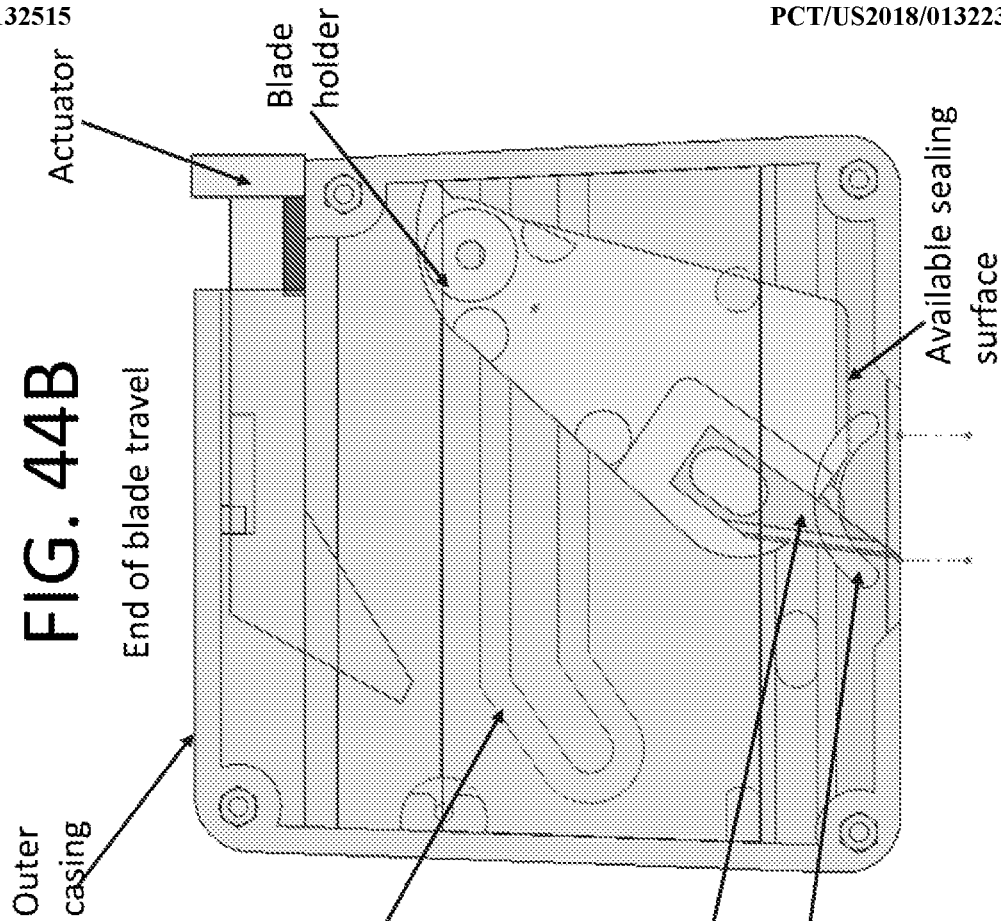
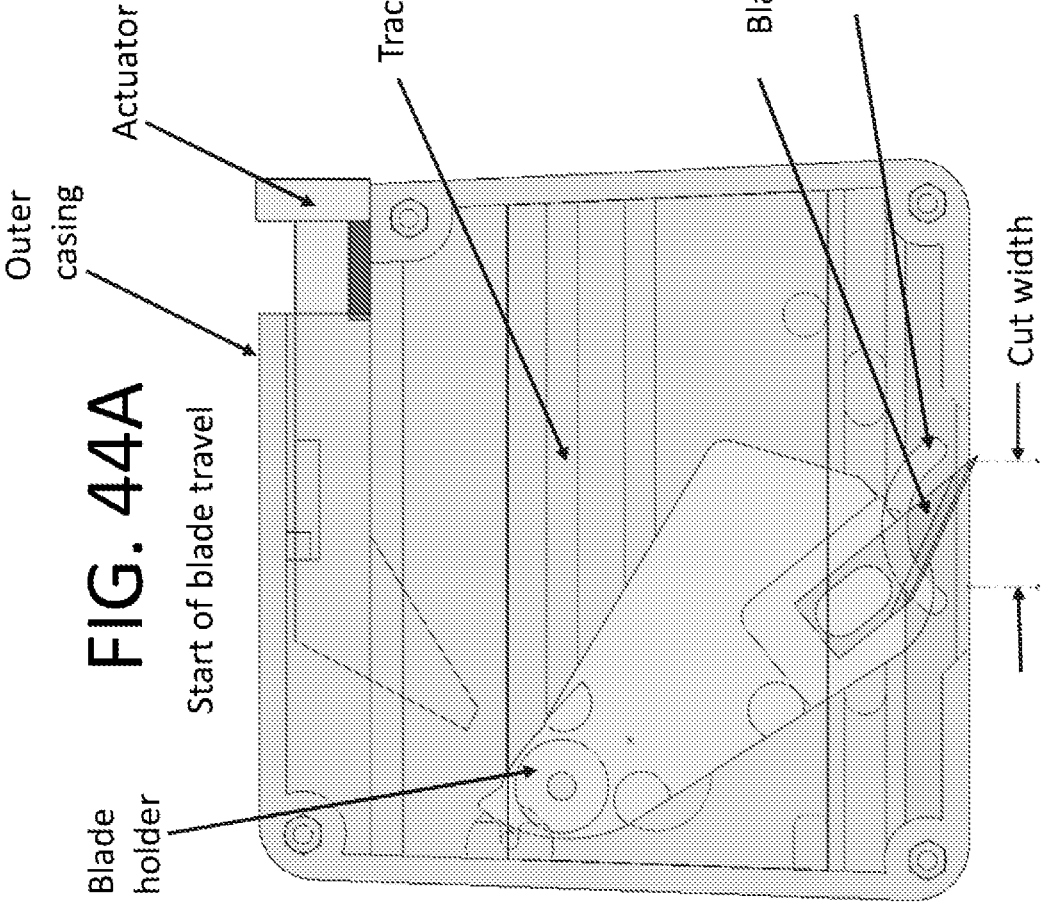


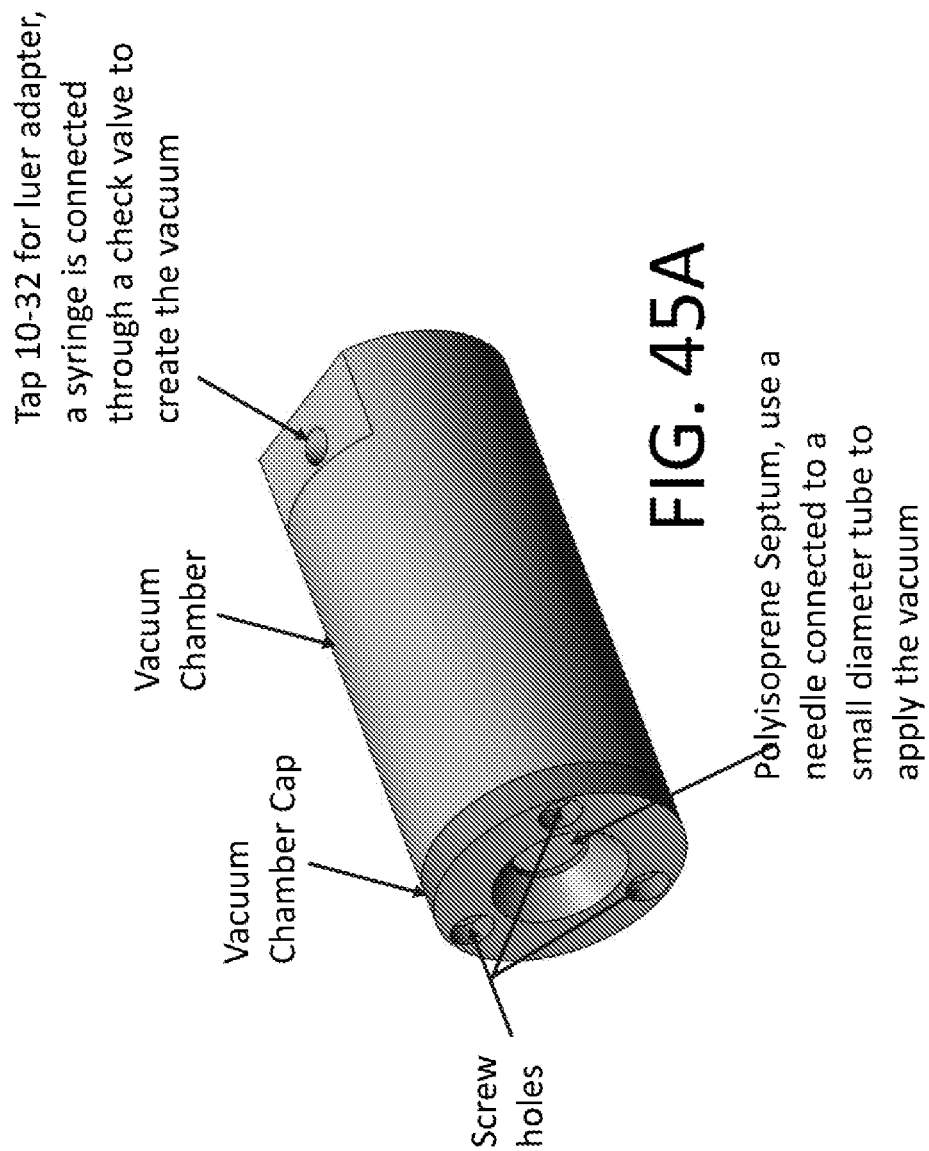
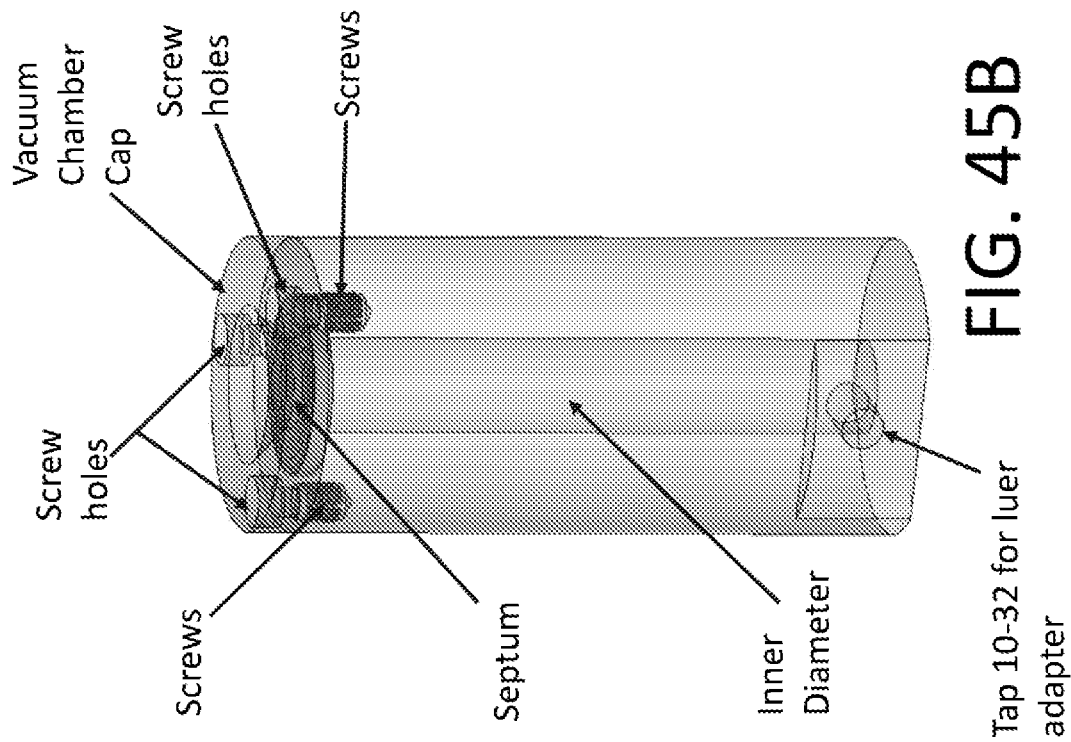
FIG. 43B

Draw Times
Targeting 250 uL

Global Vacuum with 25mm Cup and Suction Cup + Measured Tubing (2x BD High Flow)			
Draw	Blood Volumes {uL}	Draw Times (min)	
1	232	2.2	
2	236	3.5	
3	245	1.7	
4	245	1.8	
5	262	1.8	
6	236	1.0	
7	261	1.5	
Ave		245	1.9
Std Dev:		12.2	0.8
Ave Draw Rate:			127

- Using 2X high-flow lancet, ~250 uL
draws achieved in ~2 min





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Example of hypodermic needle for piercing the septum, any manufacturer is good

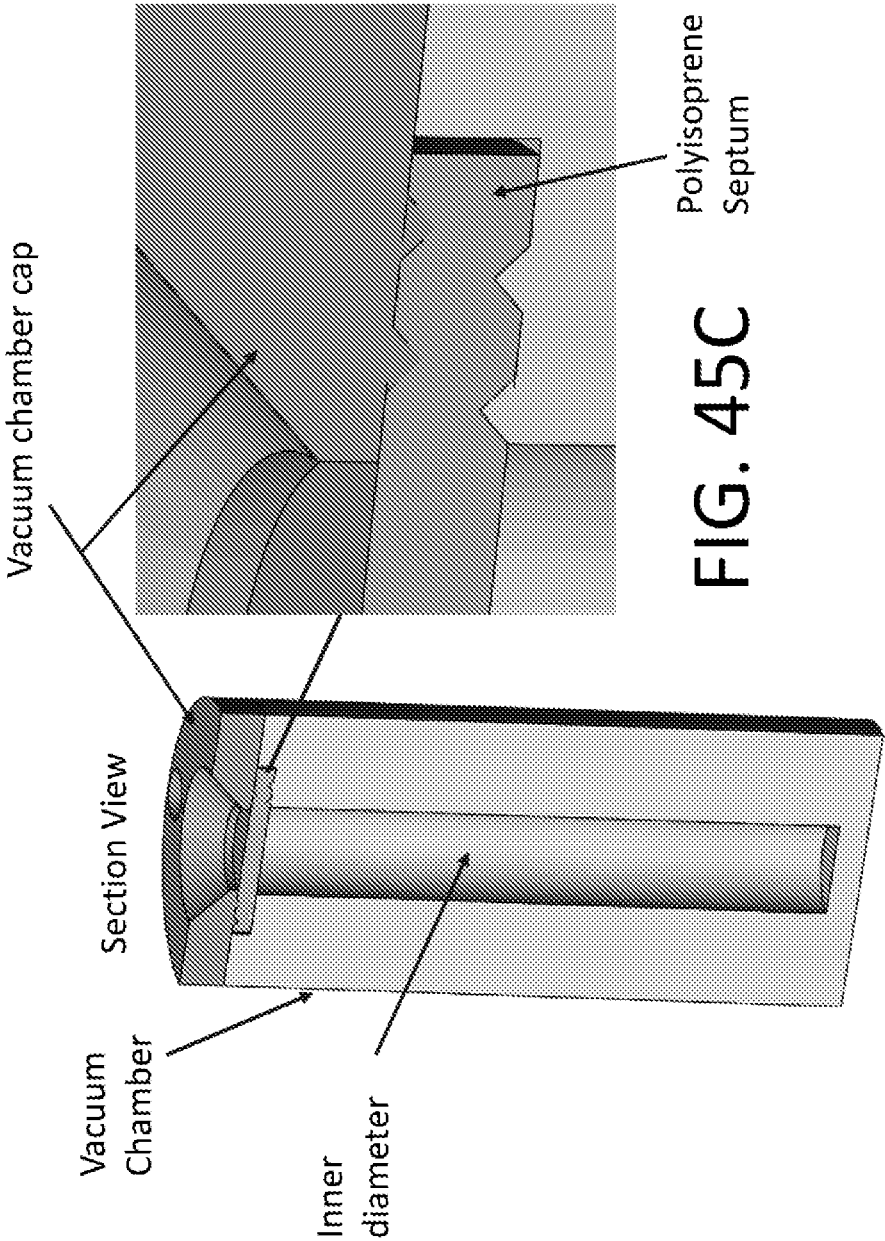
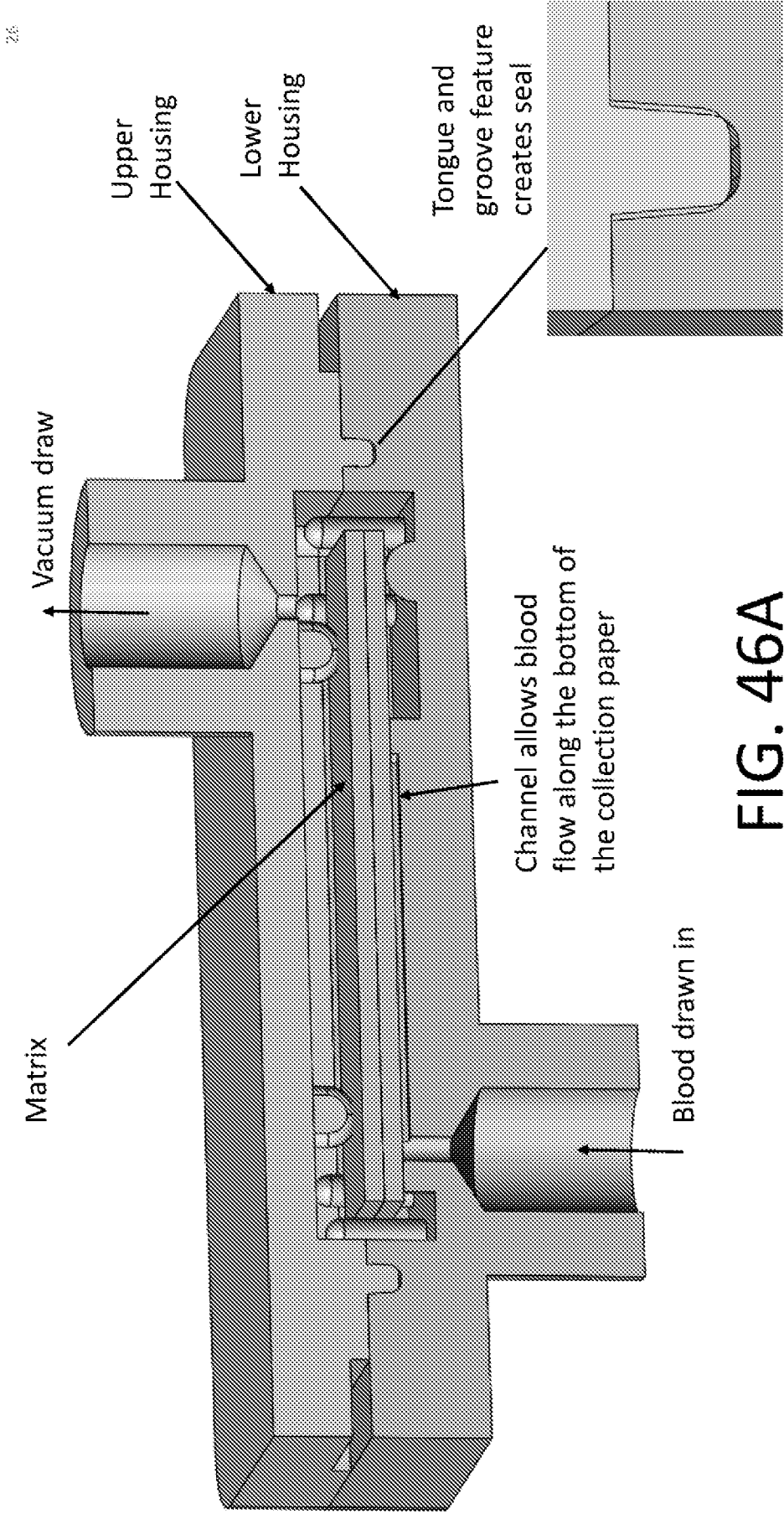


FIG. 45C



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Upper Housing

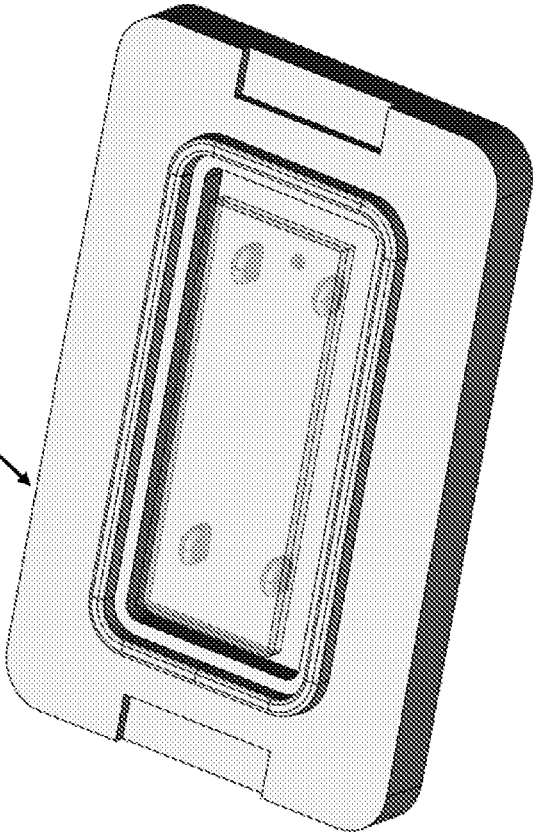


FIG. 46C

Lower Housing

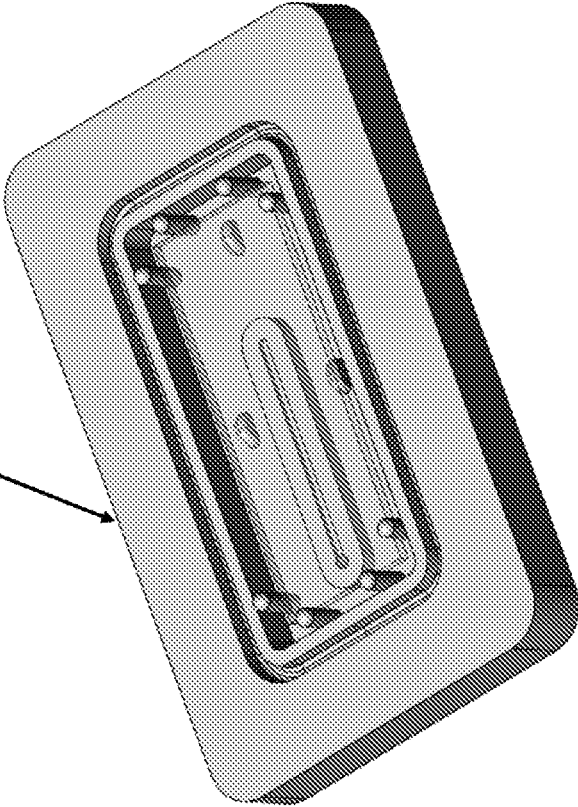


FIG. 46B

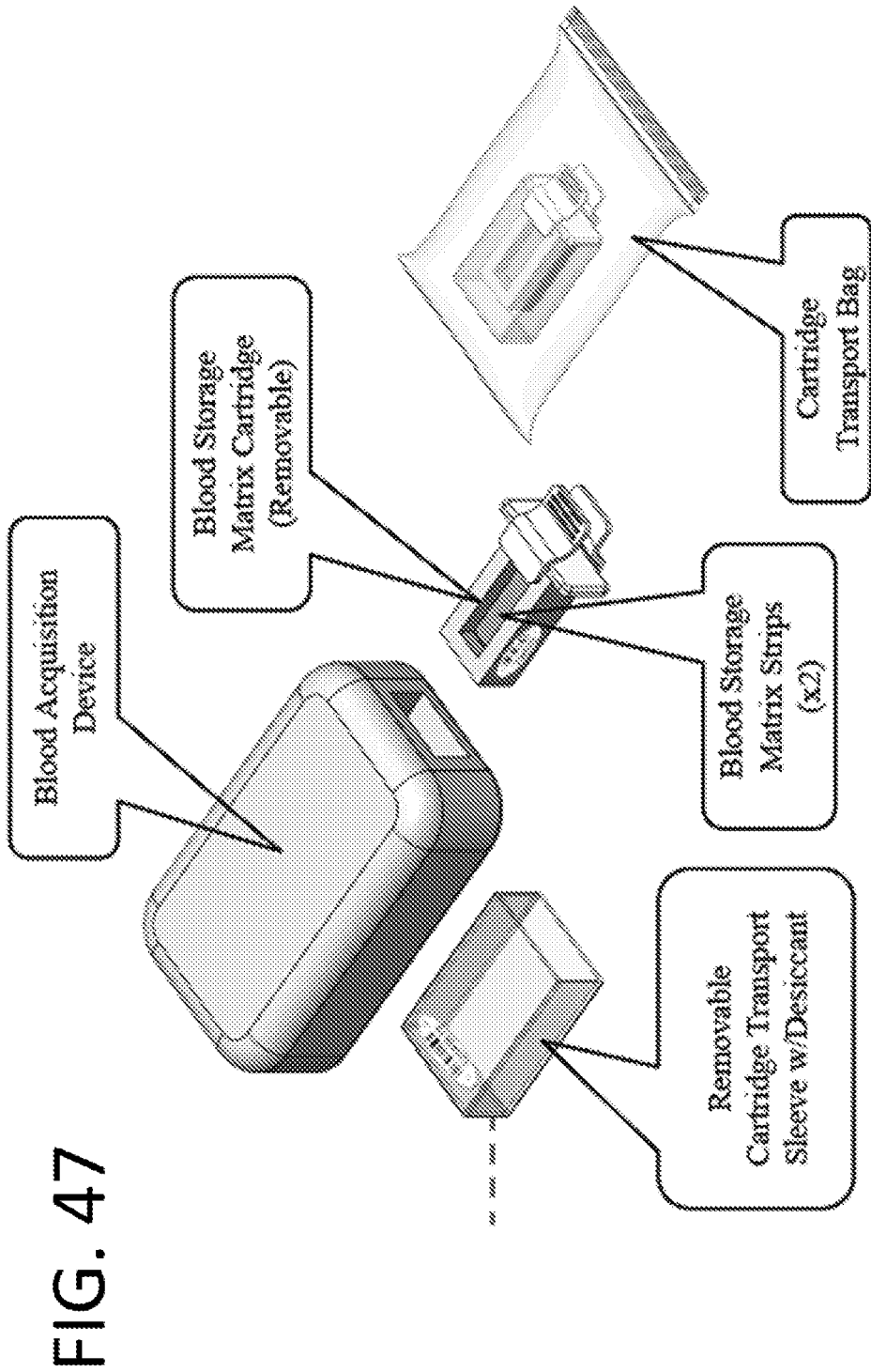


FIG. 48

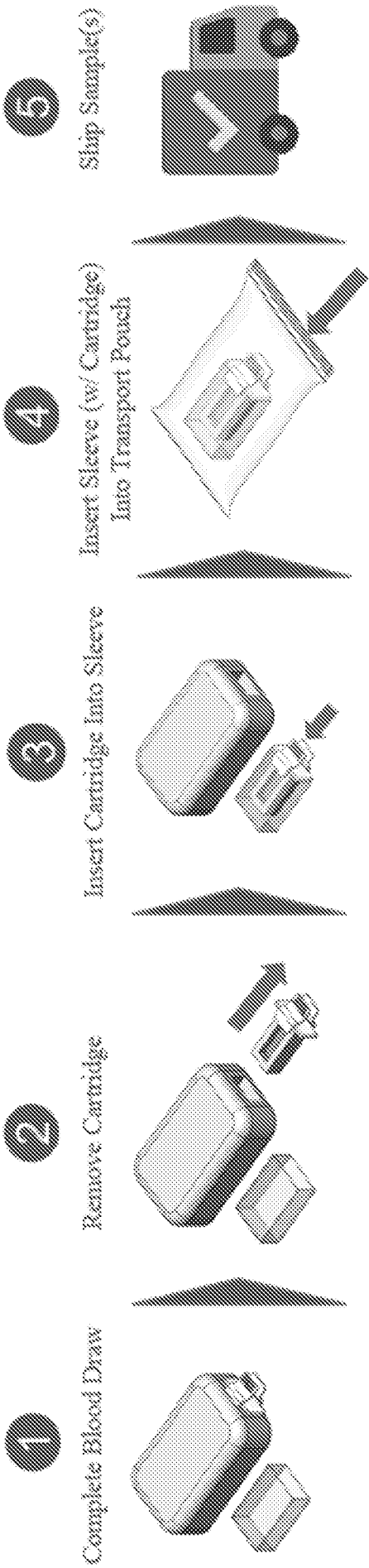


FIG. 49

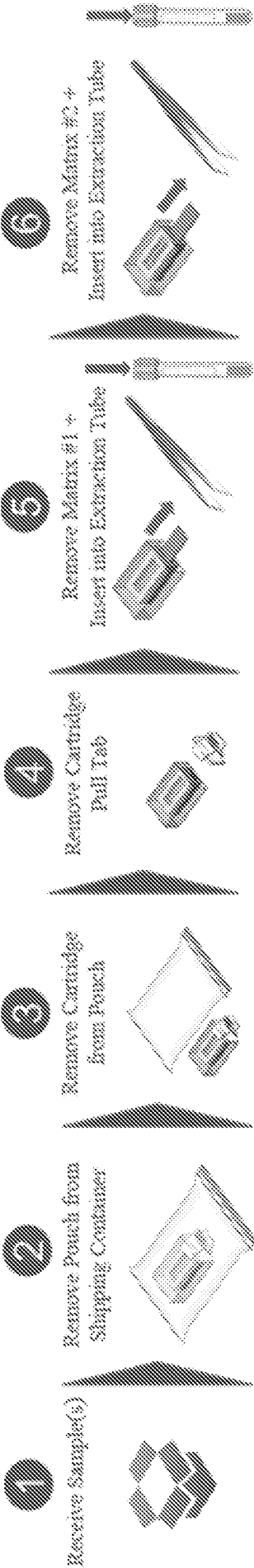


FIG. 50B

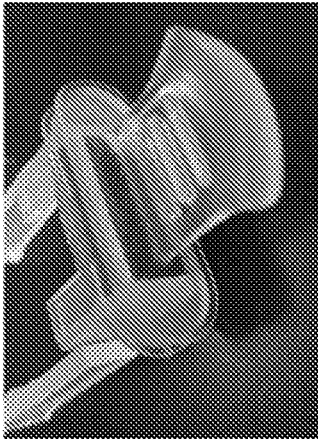


FIG. 50C

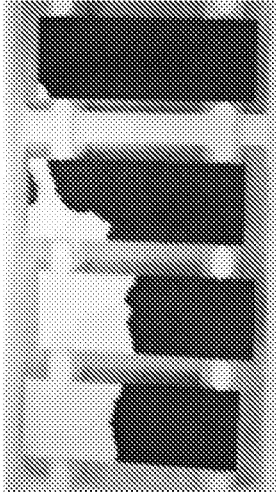


FIG. 50A

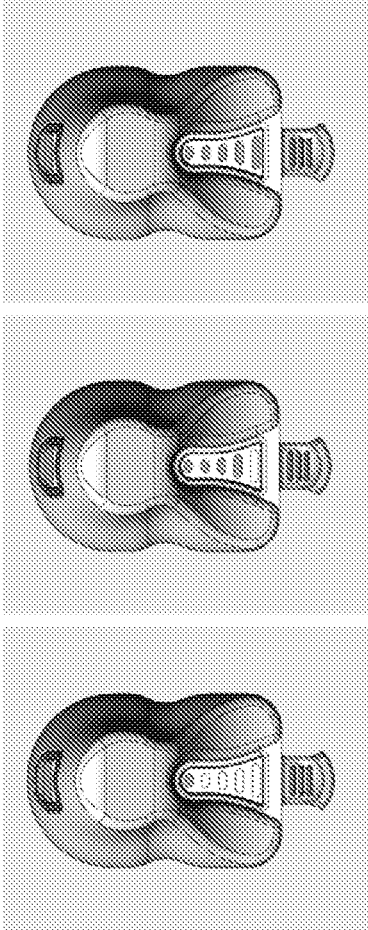
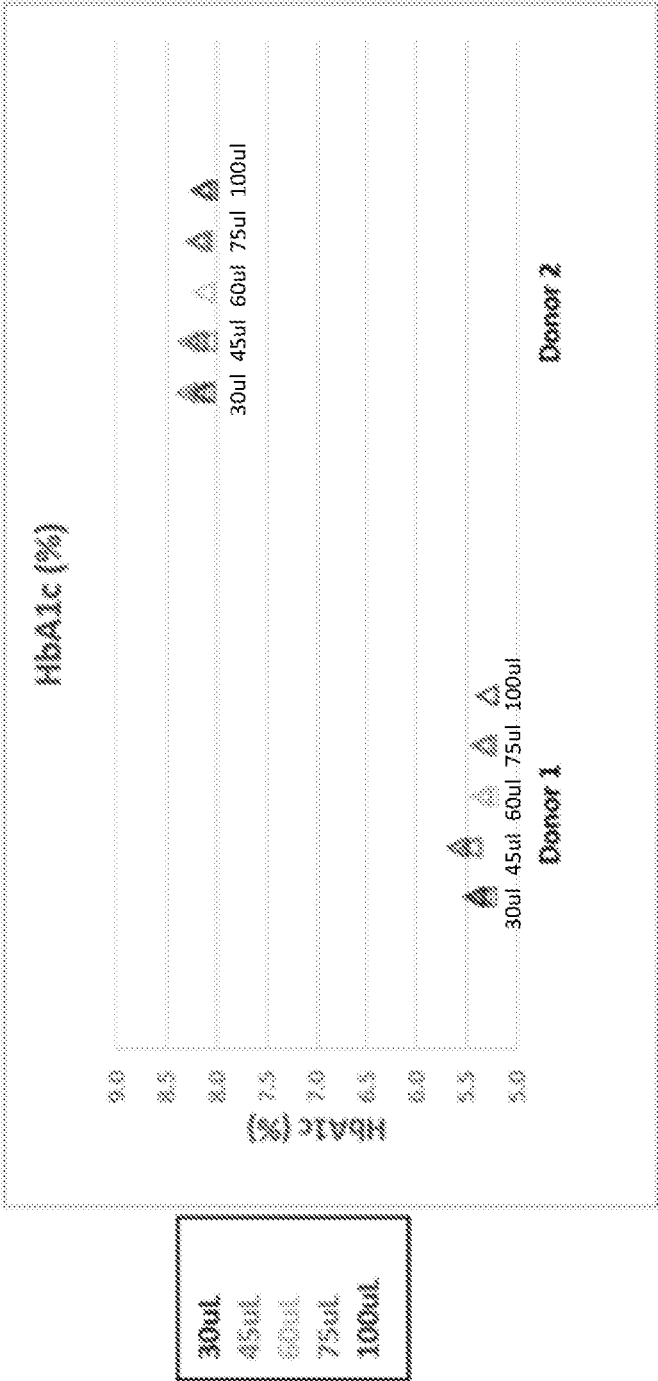
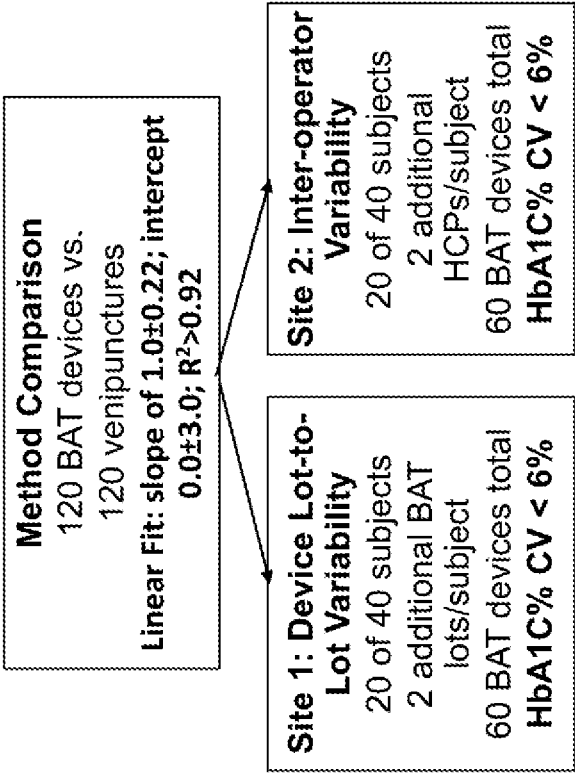


FIG. 51



120 subjects,
3 blood collection sites,
~40 subjects/site

FIG. 52



Study	Subjects	# Lots	# Devices
Method Comparison	120	1	120
Lot-to-Lot	20	3	60
Inter-operator	20	1	60

FIG. 53

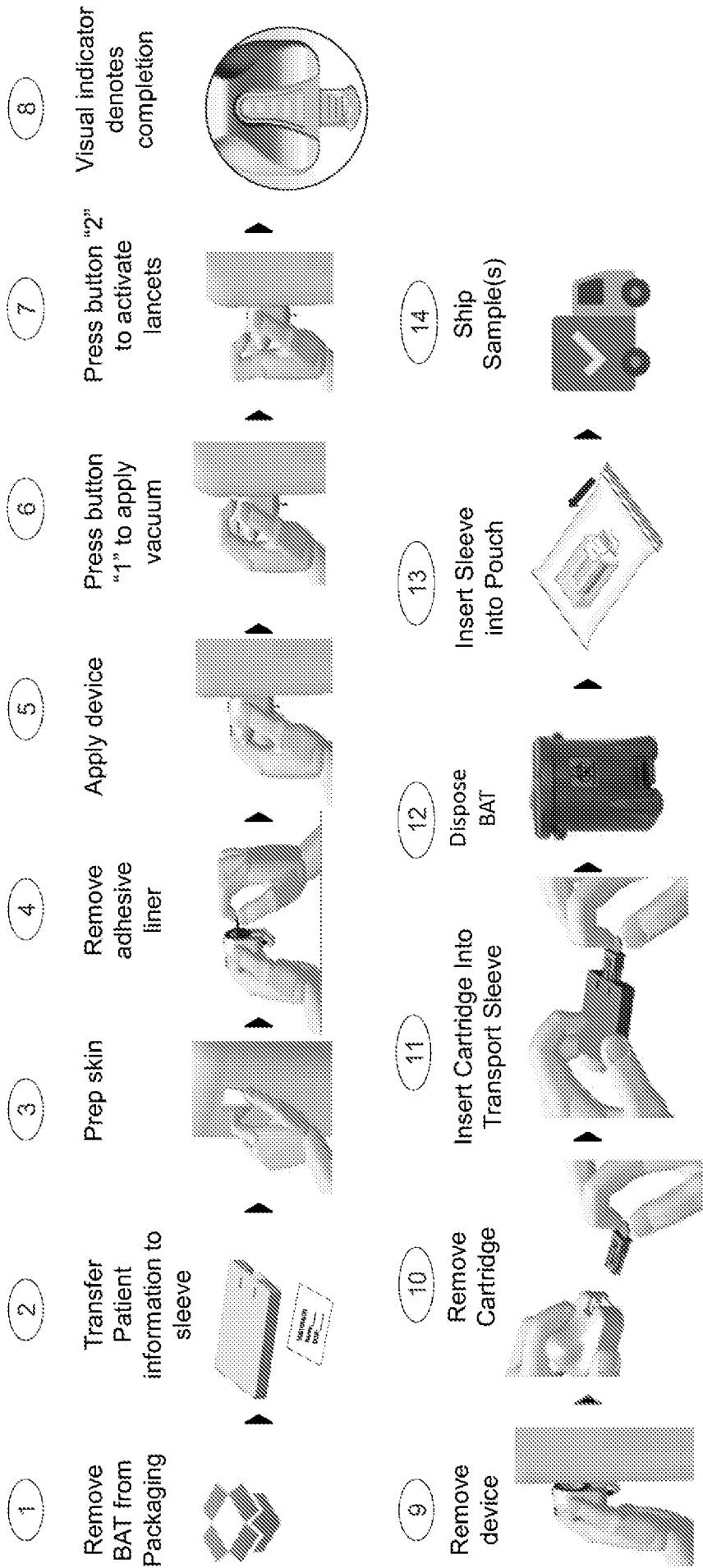


FIG. 54

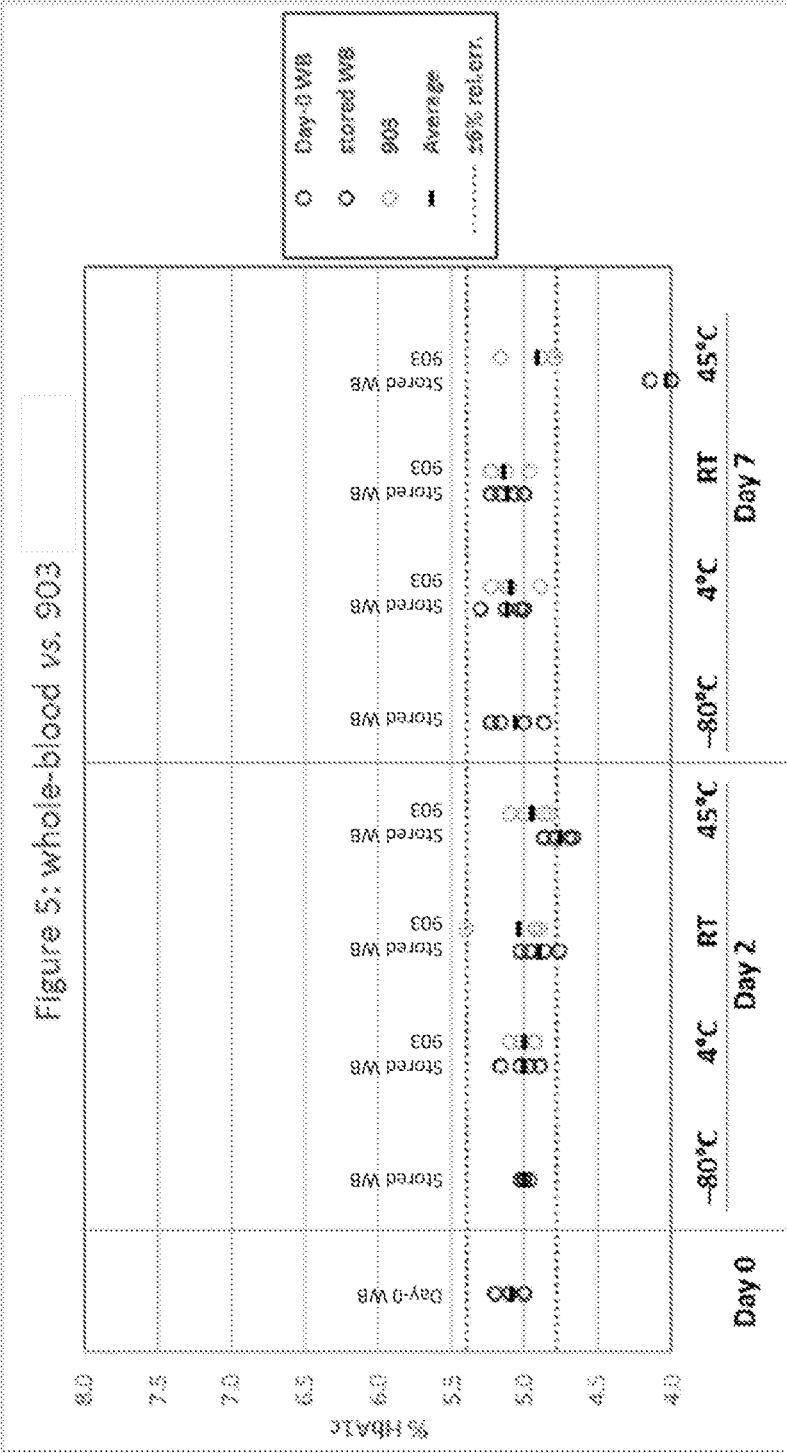


FIG. 55

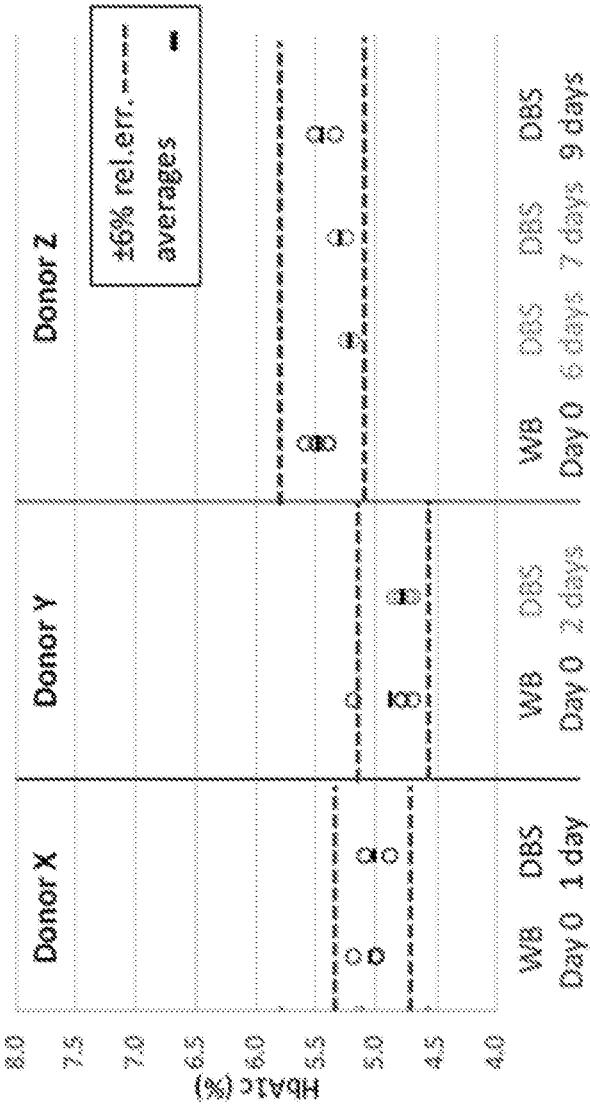


FIG. 56

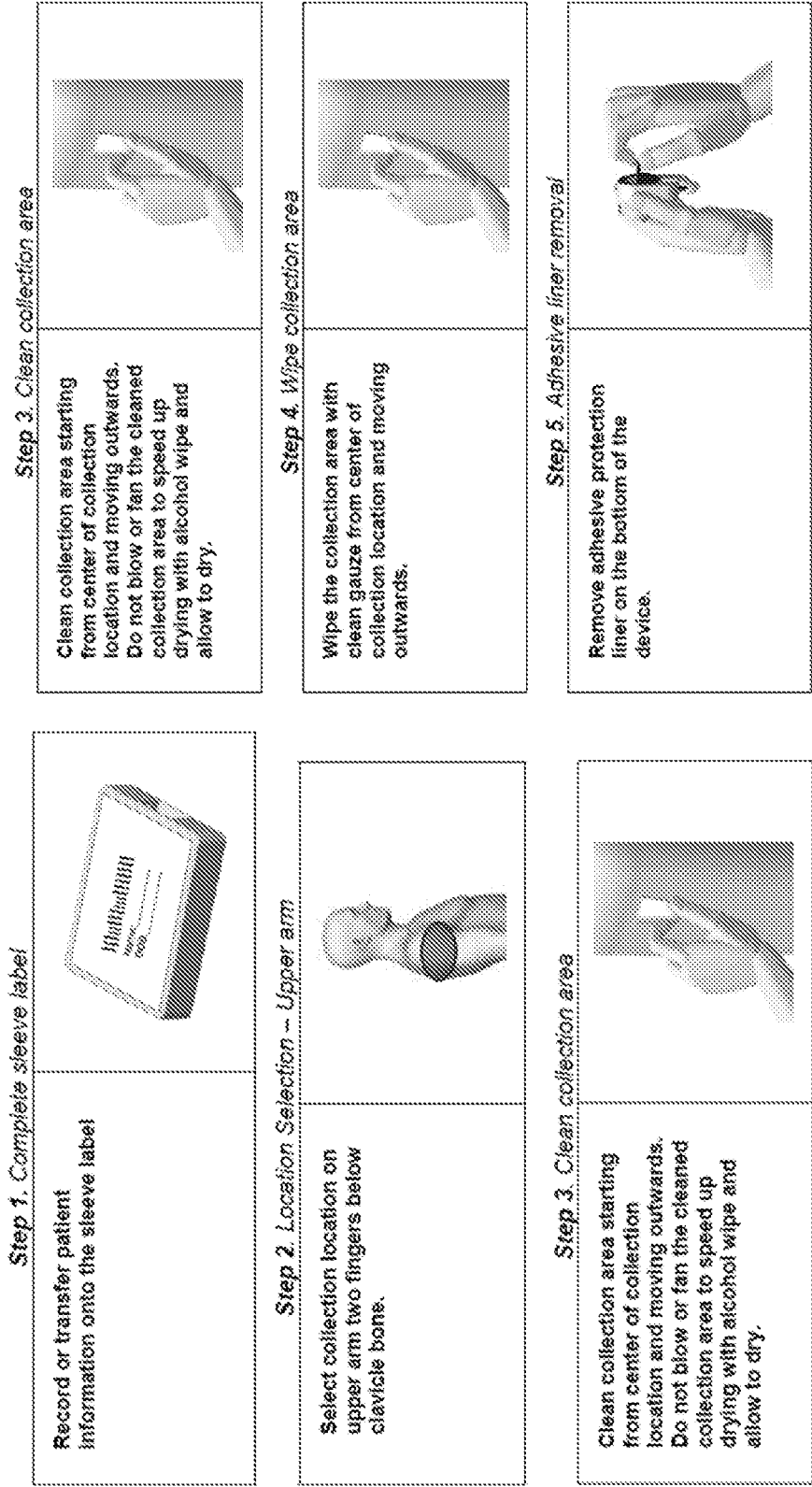


FIG. 56
Continued

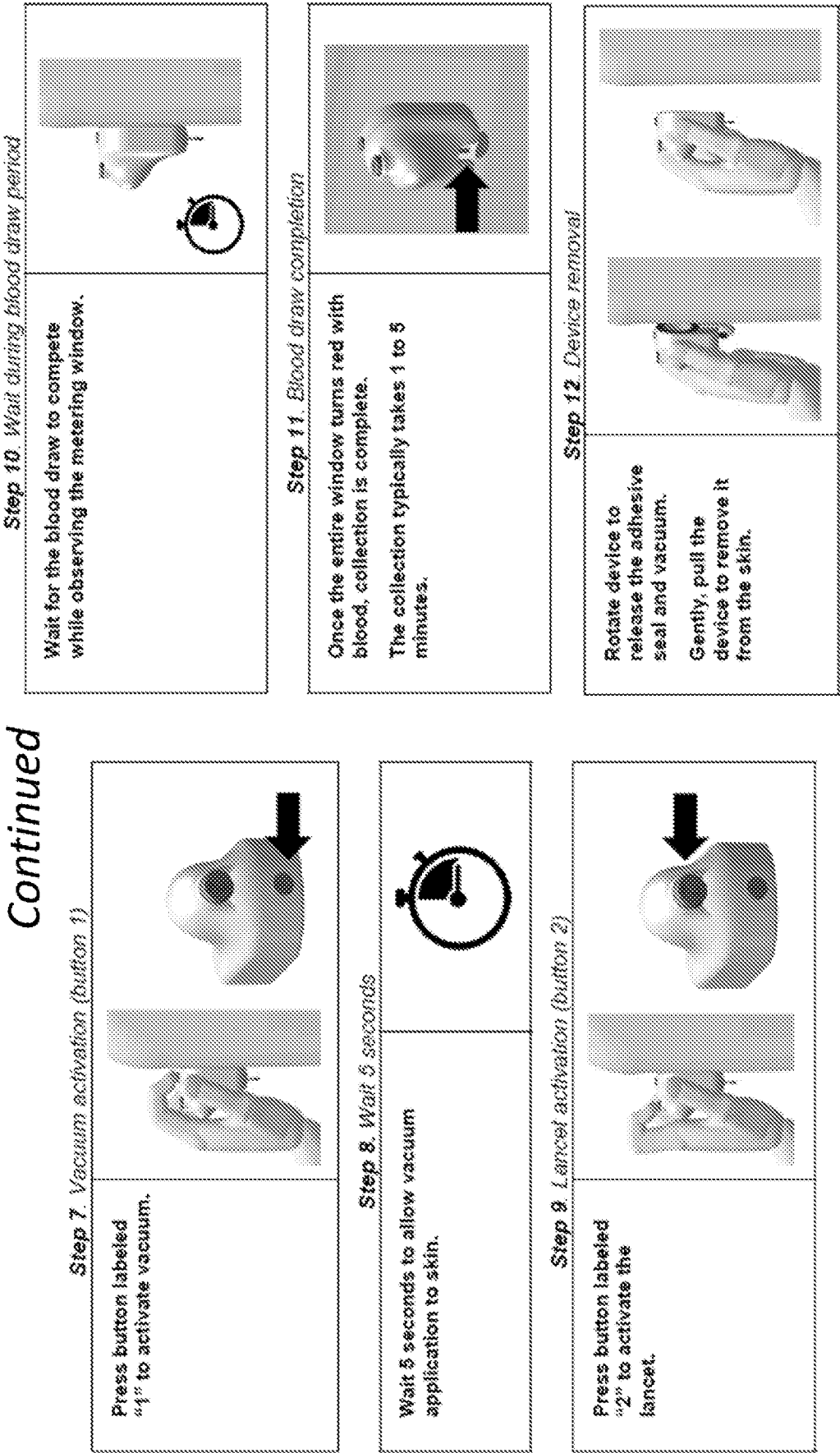


FIG. 56
Continued

