

FIG. 1A
Prior Art

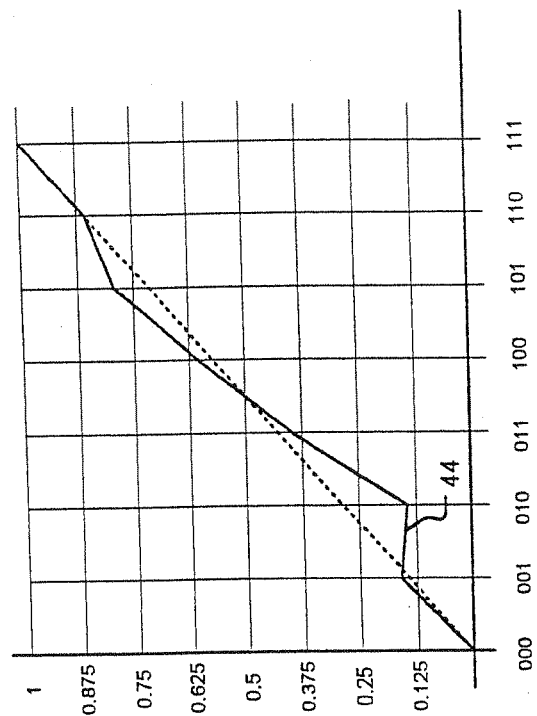
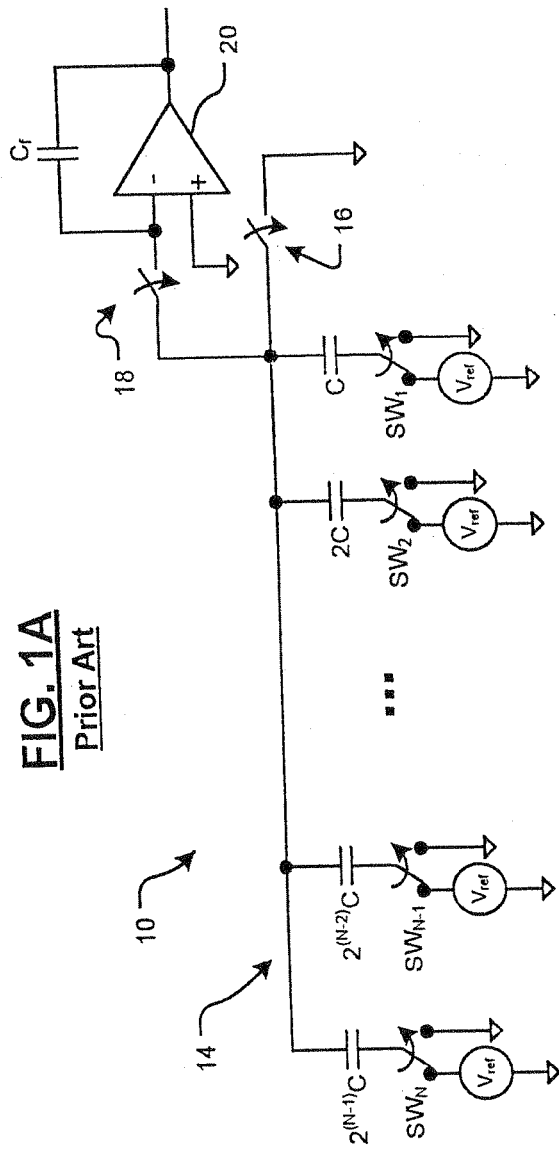


FIG. 1B
Prior Art

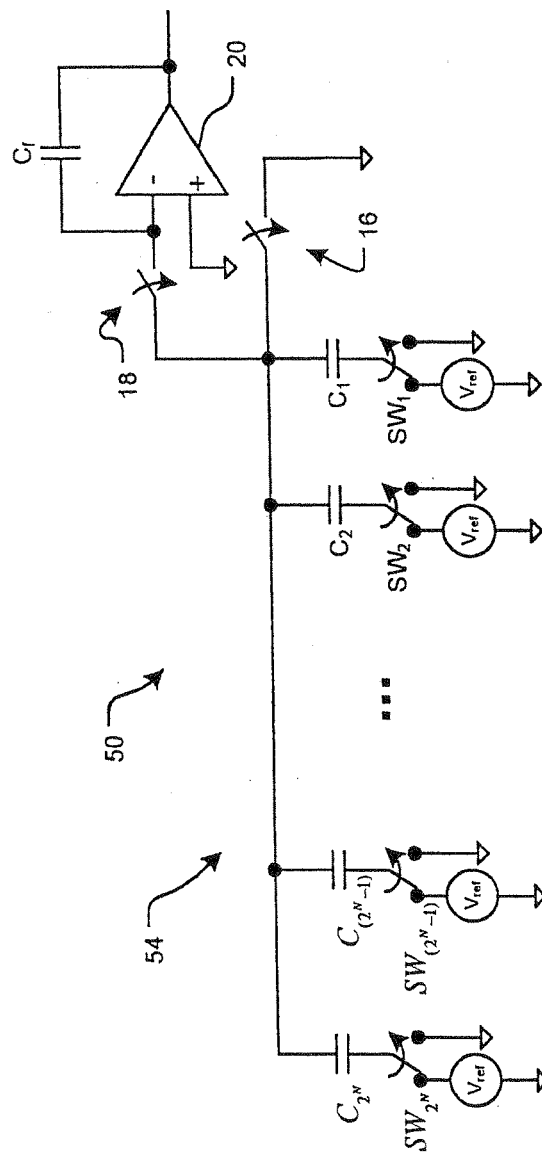


FIG. 2
Prior Art

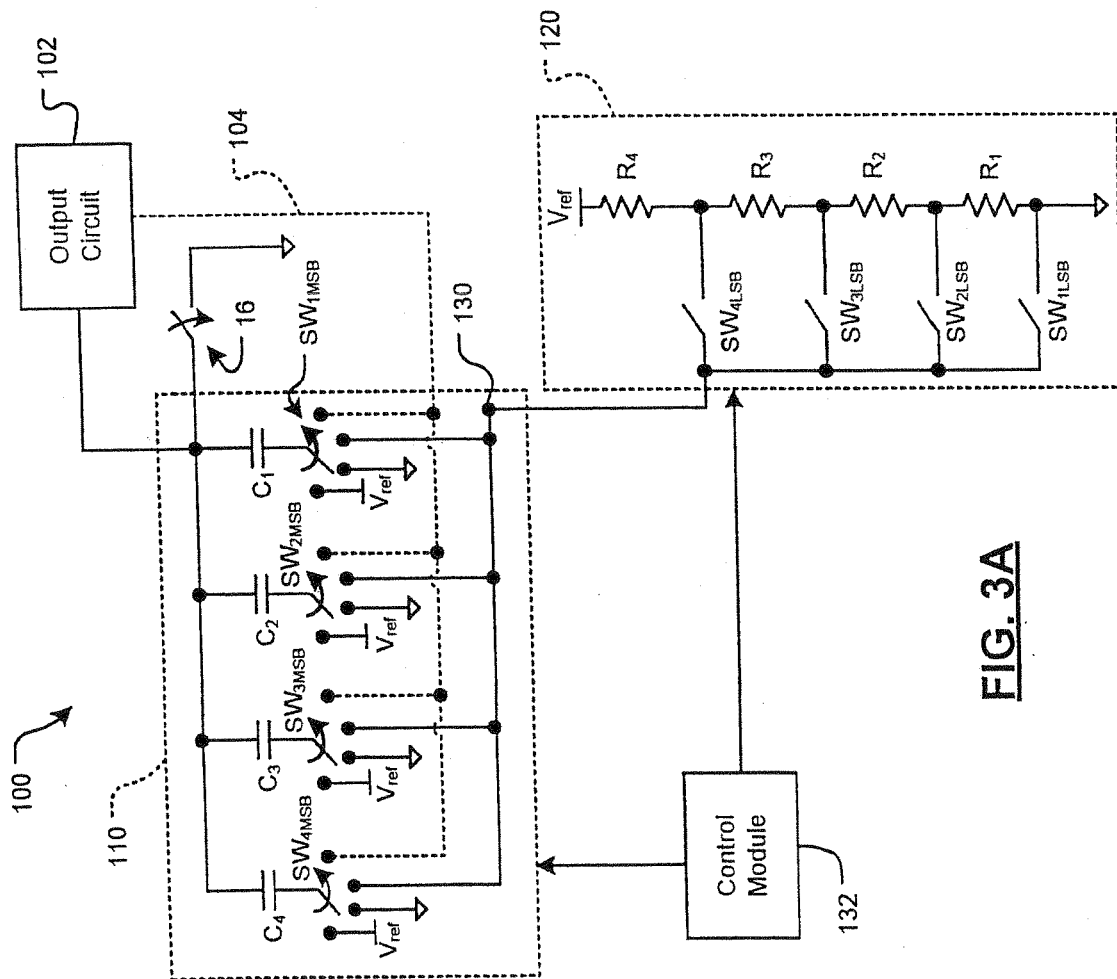
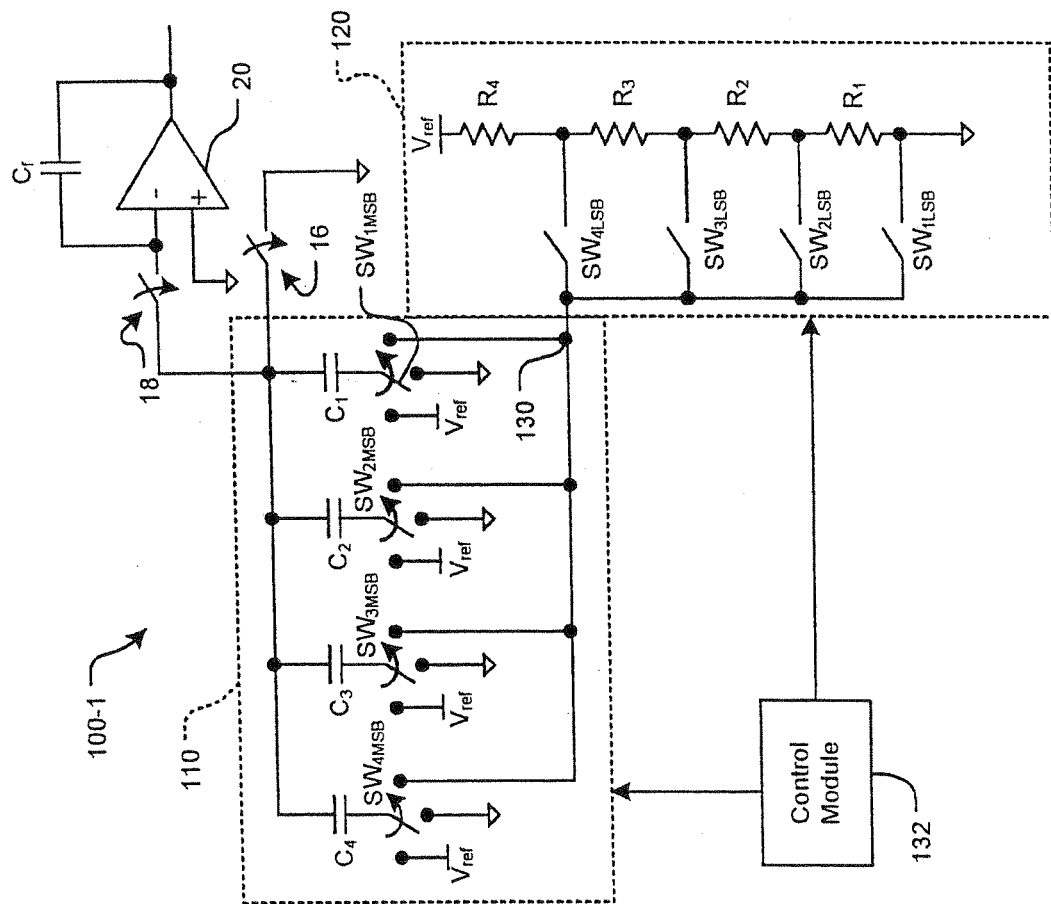
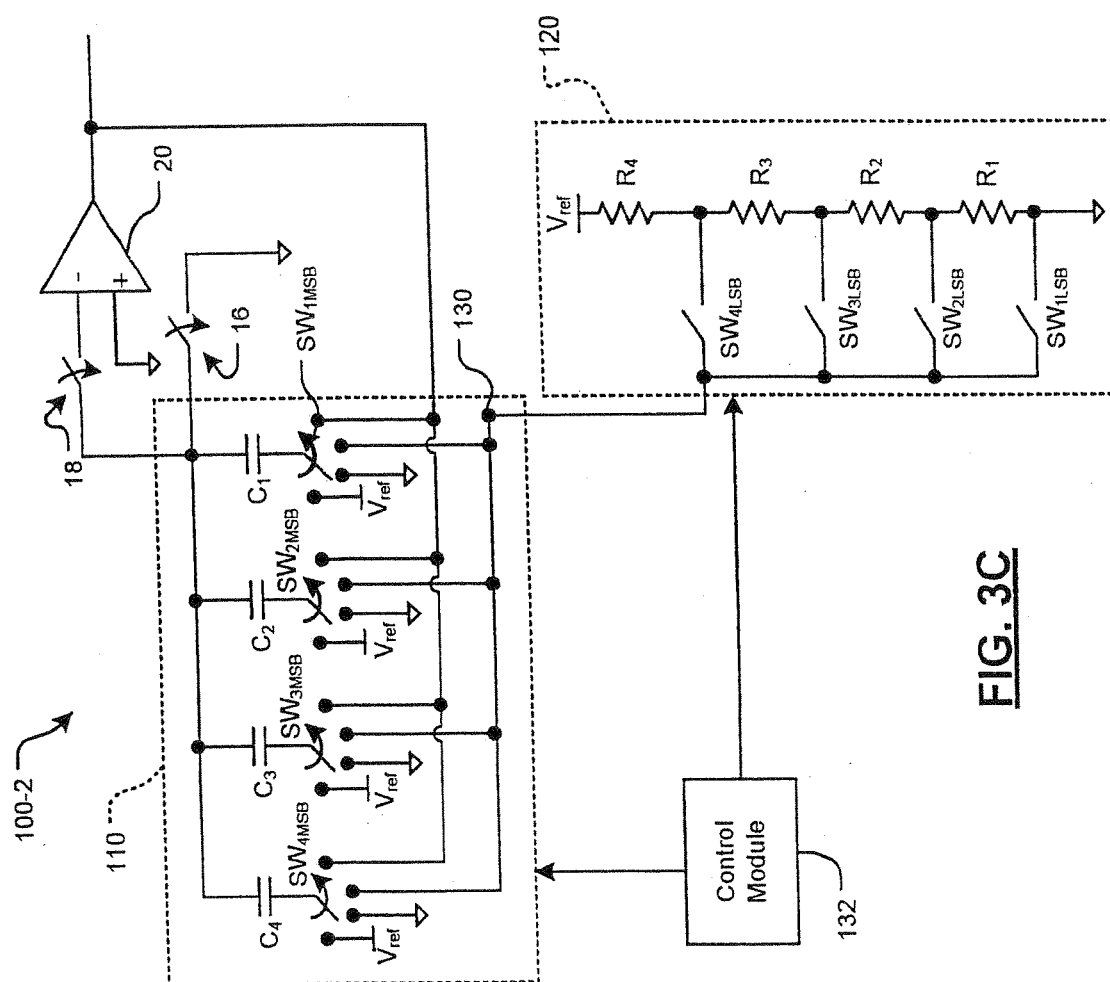


FIG. 3A

**FIG. 3B**



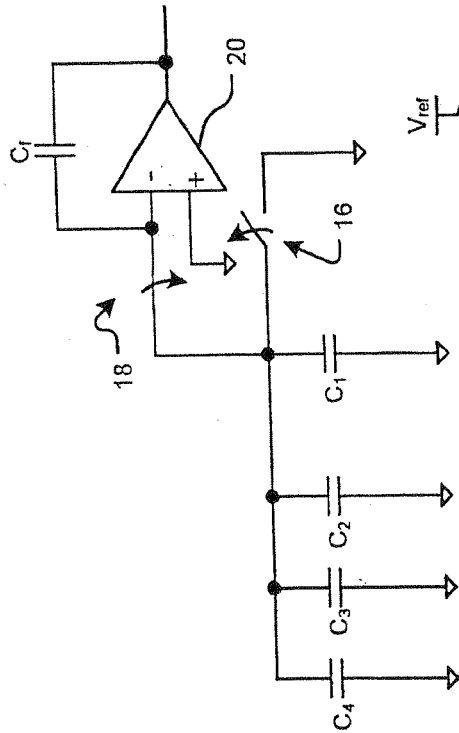
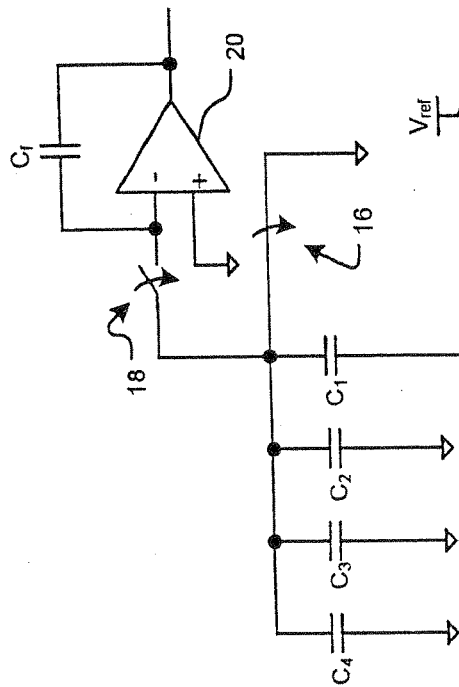
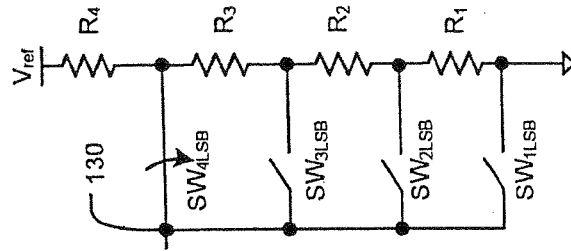
**FIG. 4B****FIG. 4A**

FIG. 4C

Code Switch		Switch Positions							
		[0000-0011]	[0000-0011]	[0100-0111]	[0100-0111]	[1000-1011]	[1000-1011]	[1100-1111]	[1100-1111]
MSB 2 bits	SW4MSB	G	G	G	G	G	G	C	G
	SW3MSB	G	G	G	G	C	G	V	G
	SW2MSB	G	G	C	G	V	G	V	G
	SW1MSB	C	G	V	G	V	G	V	G
LSB 2 bits	SW4LSB	O	O	O	O	O	O	O	O
	SW3LSB	O	O	O	O	O	O	O	O
	SW2LSB	O	O	O	O	O	O	O	O
	SW1LSB	C	O	O	O	O	O	O	O

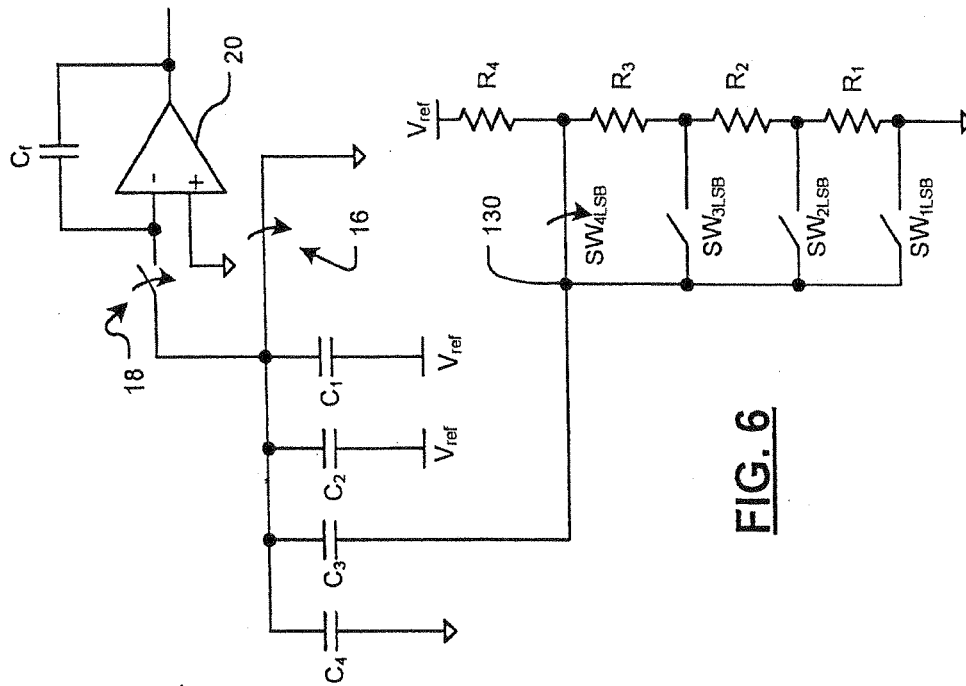
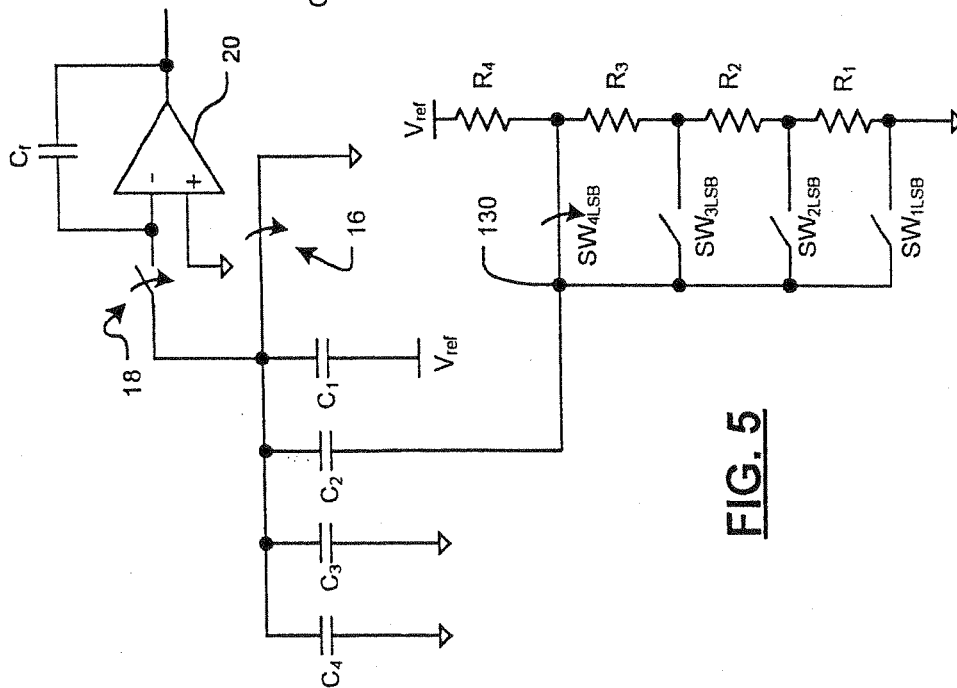
$V=V_{ref}$
 C= Node 130
 G=Ground
 O=Open
 C=Closed

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FIG. 4D

Code Switch		Switch Positions							
		[0000-0011]	[0000-0011]	[0100-0111]	[0100-0111]	[1000-1011]	[1000-1011]	[1100-1111]	[1100-1111]
MSB 2 bits	SW4MSB	G	A	G	A	G	A	C	A
	SW3MSB	G	A	G	A	C	A	V	A
	SW2MSB	G	A	C	A	V	A	V	A
	SW1MSB	C	A	V	A	V	A	V	A
LSB 2 bits	SW4LSB	O	O	O	O	O	O	O	O
	SW3LSB	O	O	O	O	O	O	O	O
	SW2LSB	O	O	O	O	O	O	O	O
	SW1LSB	C	O	O	O	O	O	O	O

$V=V_{ref}$
 C= Node 130
 G=Ground
 O=Open
 C=Closed
 A=Amp Output

**FIG. 6****FIG. 5**

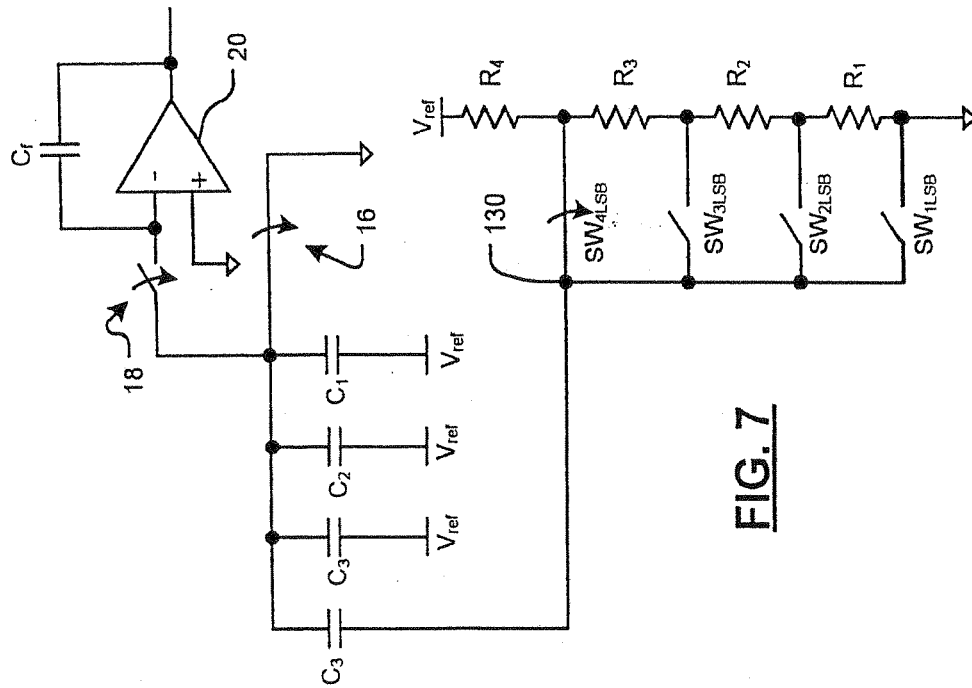
**FIG. 7**

FIG. 8A

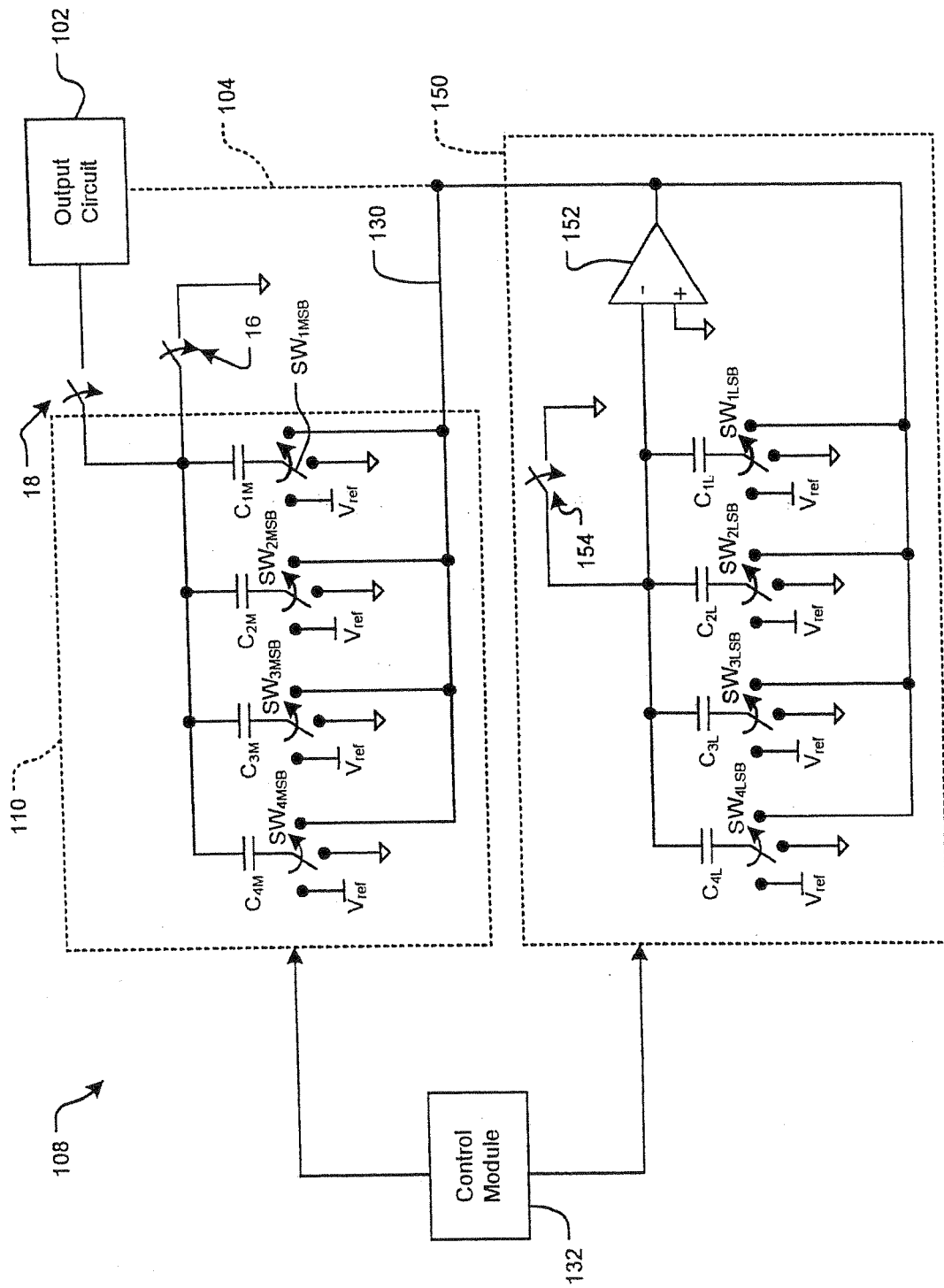
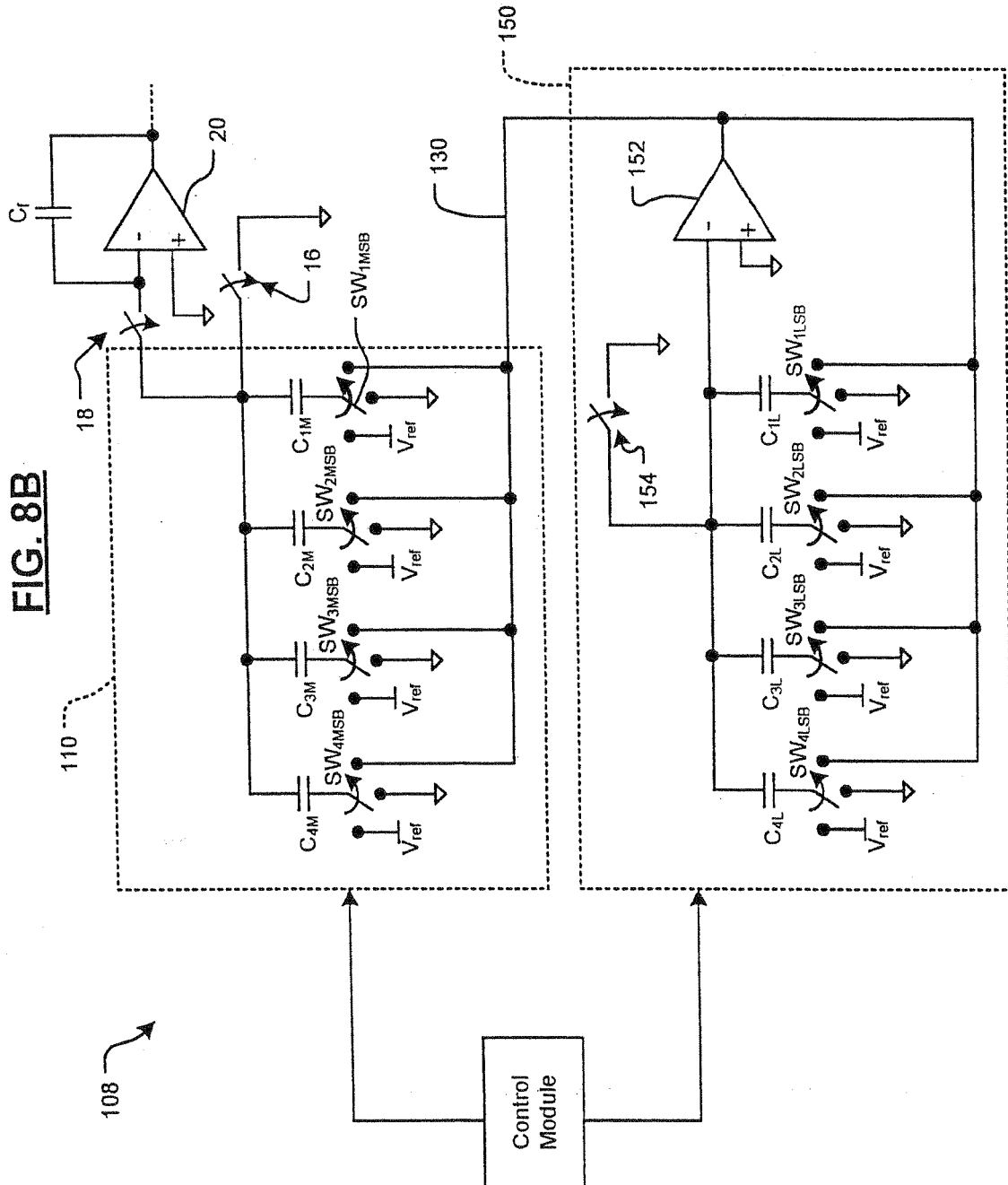


FIG. 8B



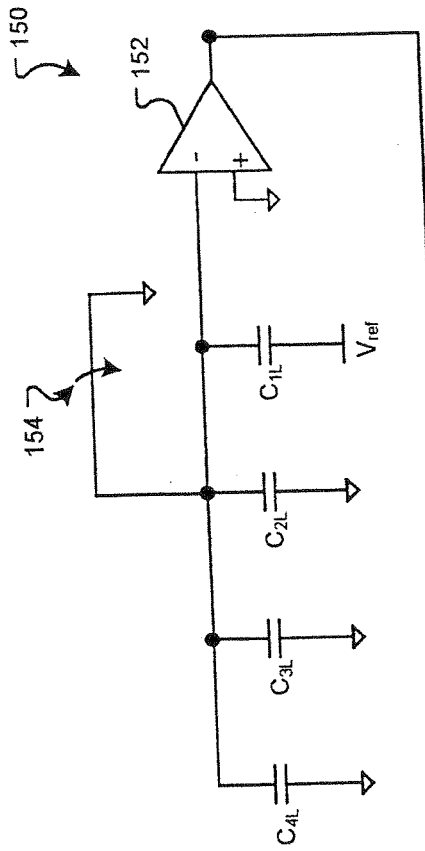


FIG. 8C

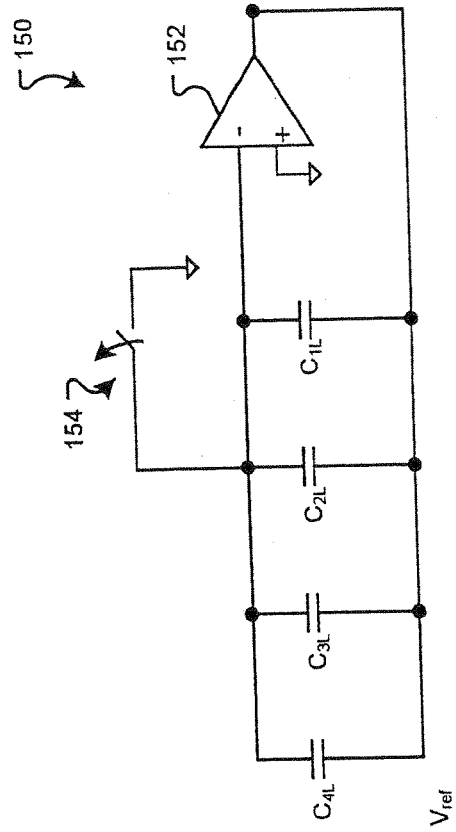
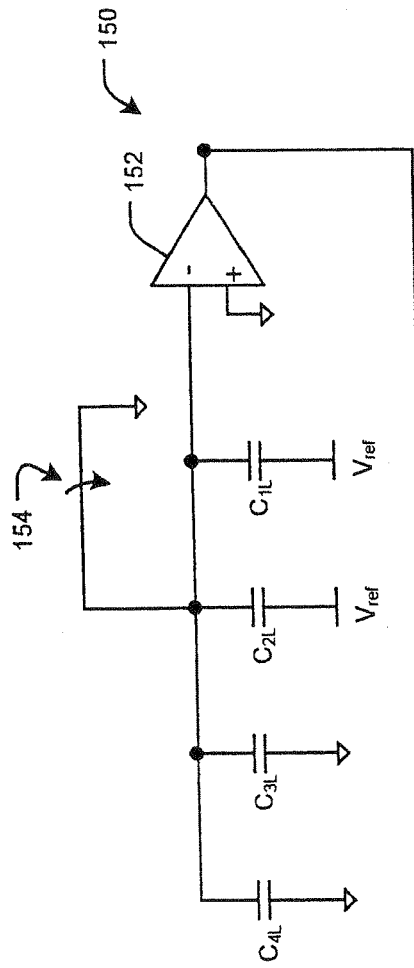
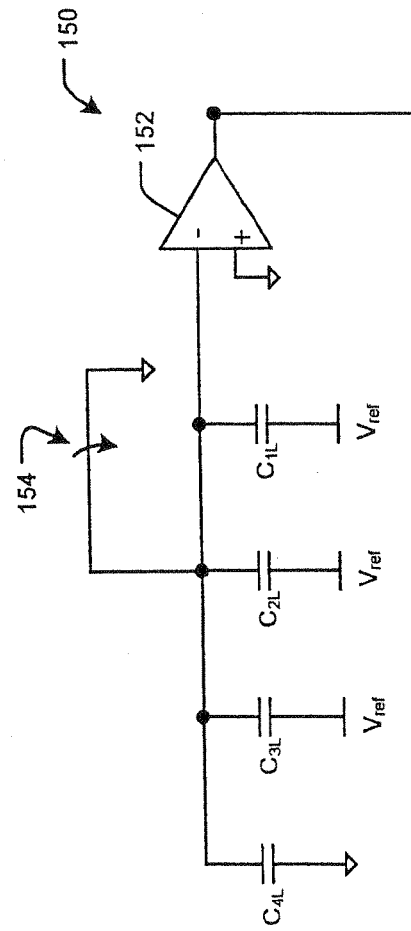
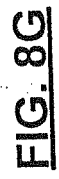


FIG. 8D

**FIG. 8E****FIG. 8F**



100

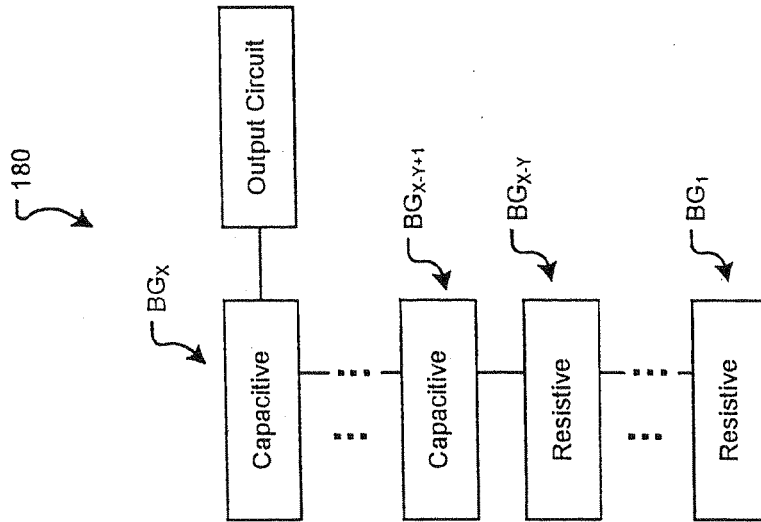
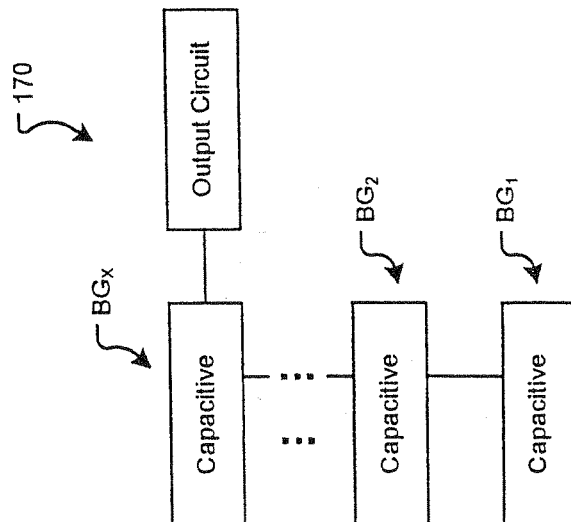
FIG. 8

100

Code		Switch Positions															
Switch		[0000-0011]								[0100-0111]							
MSB 2 bits	SW4MSB	G	G	F	F	F	F	F	F	G	G	X	X	X	G	G	I or H-MSB
	SW3MSB	G	G	F	F	F	F	F	F	G	G	X	X	X	G	G	I or H-MSB
	SW2MSB	G	G	F	F	F	F	F	F	G	G	X	X	X	C	C	I or H-MSB
	SW1MSB	G	G	F	F	F	F	F	F	G	G	X	X	X	V	V	I or H-MSB
		G	G	F	F	F	F	F	F	G	G	X	X	X			I or H-MSB
LSB 2 bits	SW4LSB	G	G	F	F	F	F	F	F	G	G	X	X	X	F	F	I or H-MSB
	SW3LSB	G	G	F	F	F	F	F	F	G	G	X	X	X	F	F	I or H-MSB
	SW2LSB	G	G	F	F	F	F	F	F	G	G	X	X	X	F	F	I or H-MSB
	SW1LSB	G	G	F	F	F	F	F	F	G	G	X	X	X	F	F	I or H-MSB
		G	G	F	F	F	F	F	F	G	G	X	X	X	F	F	I or H-MSB
		0 to 0.75Vref															
Code		Vref to 1.75Vref															
Switch		[1000-1011]								[1100-1111]							
MSB 2 bits	SW4MSB	G	G	F	F	F	F	F	F	G	G	X	X	X	C	C	I or H-MSB
	SW3MSB	G	G	F	F	F	F	F	F	G	G	X	X	X	V	V	I or H-MSB
	SW2MSB	G	G	F	F	F	F	F	F	G	G	X	X	X	V	V	I or H-MSB
	SW1MSB	G	G	F	F	F	F	F	F	G	G	X	X	X	V	V	I or H-MSB
		G	G	F	F	F	F	F	F	G	G	X	X	X			I or H-MSB
LSB 2 bits	SW4LSB	G	G	F	F	F	F	F	F	G	G	X	X	X	F	F	I or H-MSB
	SW3LSB	G	G	F	F	F	F	F	F	G	G	X	X	X	F	F	I or H-MSB
	SW2LSB	G	G	F	F	F	F	F	F	G	G	X	X	X	F	F	I or H-MSB
	SW1LSB	G	G	F	F	F	F	F	F	G	G	X	X	X	F	F	I or H-MSB
		G	G	F	F	F	F	F	F	G	G	X	X	X	F	F	I or H-MSB
		2Vref to 2.75Vref															
Switch		3Vref to 3.75Vref															

$V = V_{ref}$
 C = Node 130
 G = Ground
 F = Feedback
 X = Don't Care
 A = Amp Output

FIG. 8J

FIG. 9BFIG. 9A

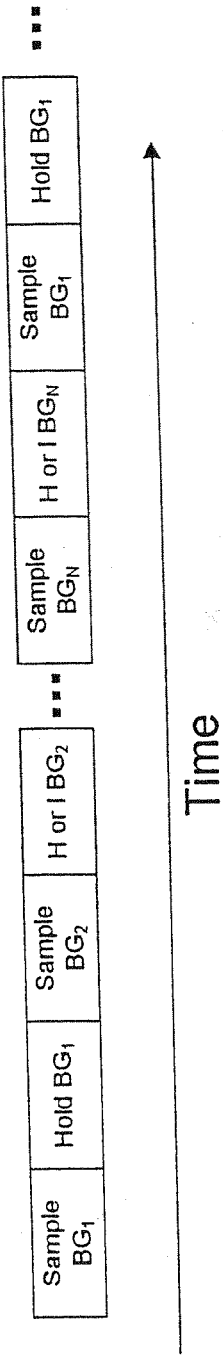


FIG. 9C

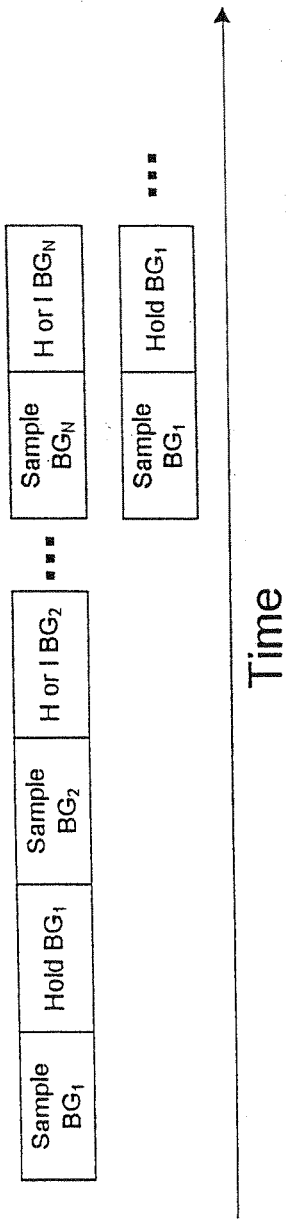
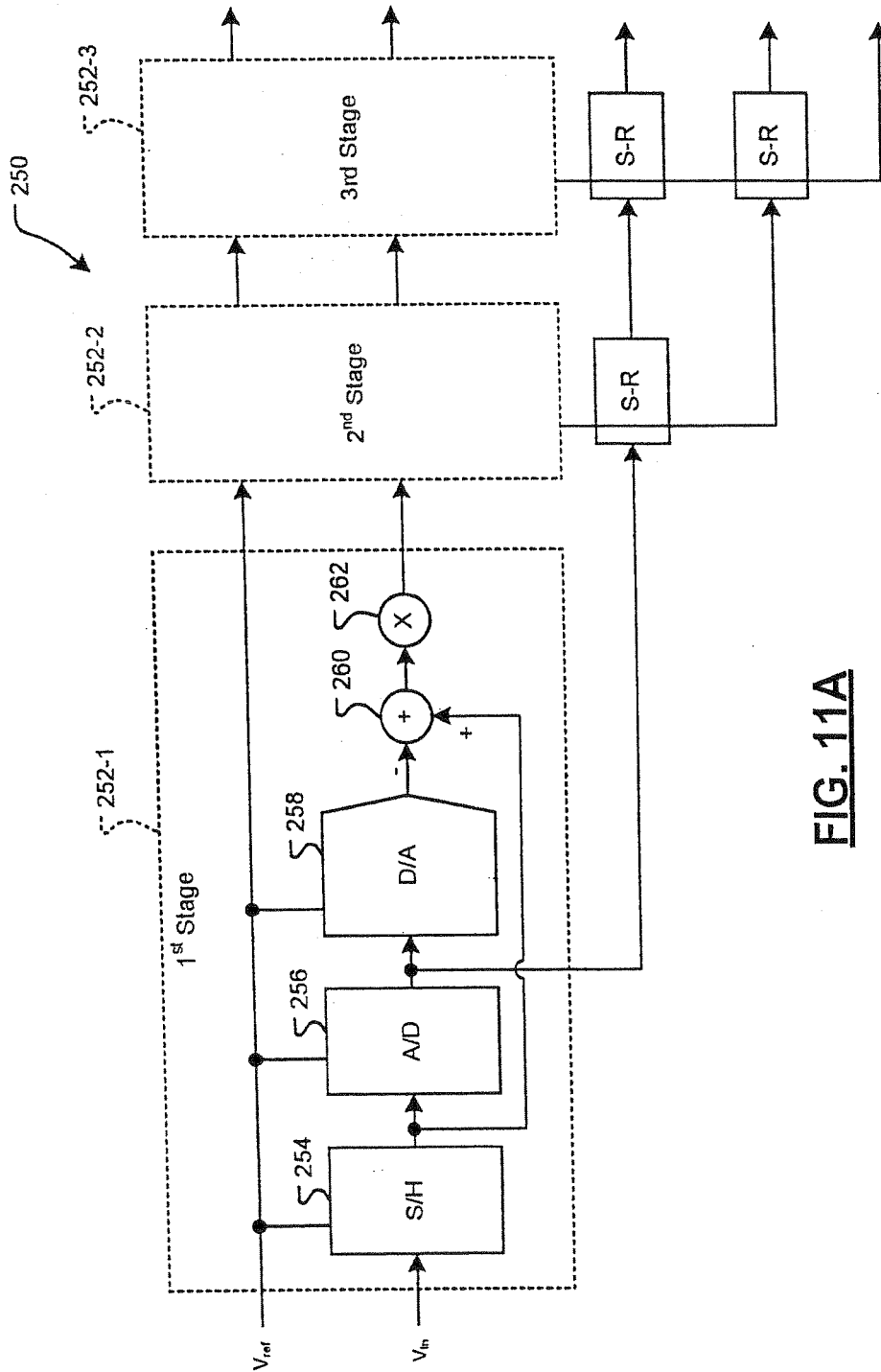


FIG. 9D

**FIG. 11A**

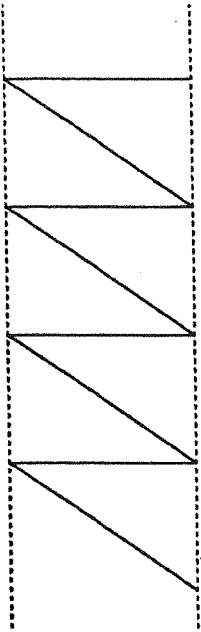


FIG. 11B

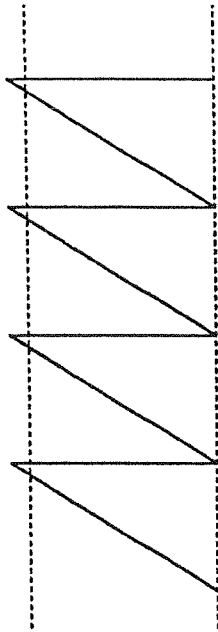


FIG. 11C

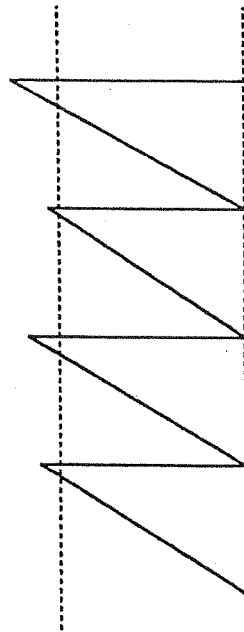


FIG. 11D

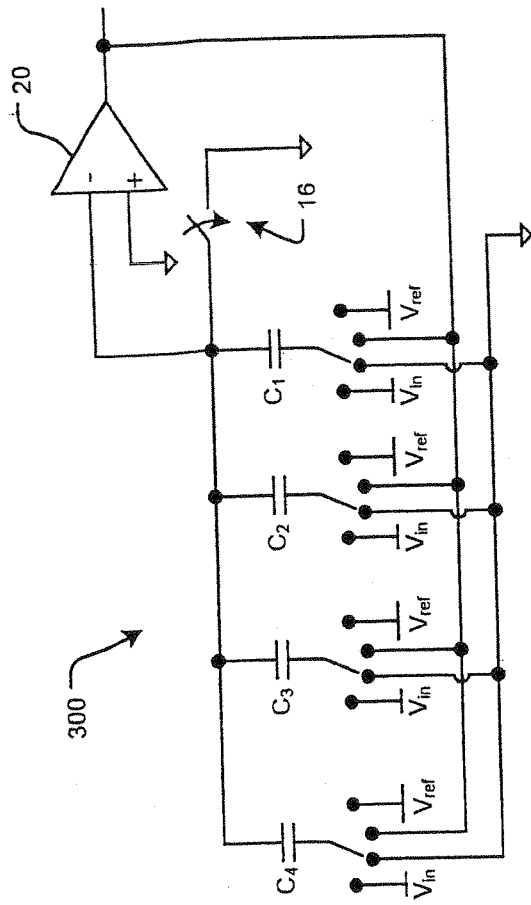


FIG. 12A

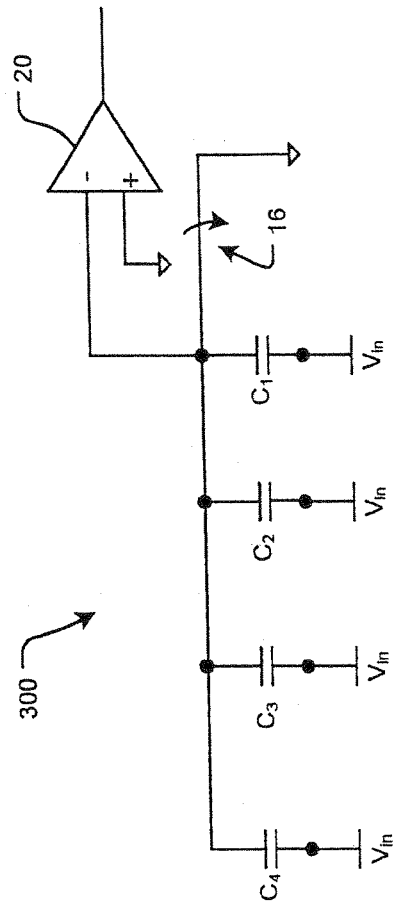


FIG. 12B

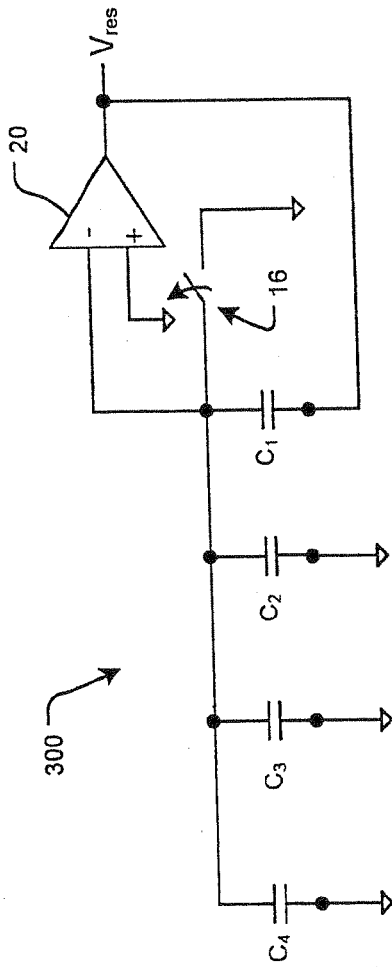
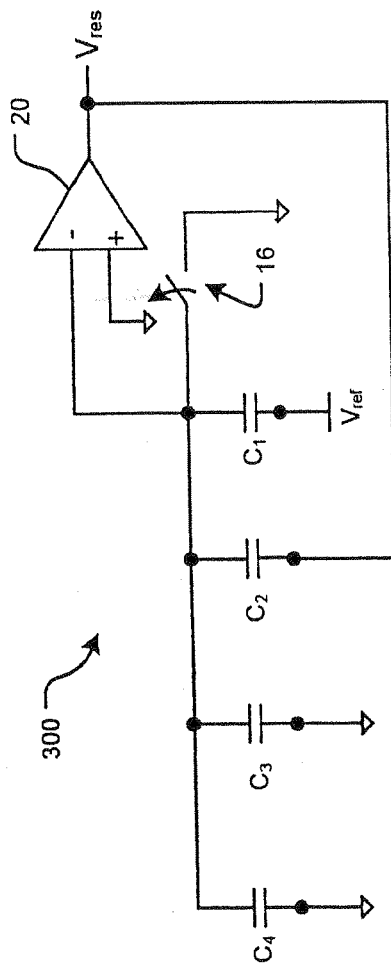
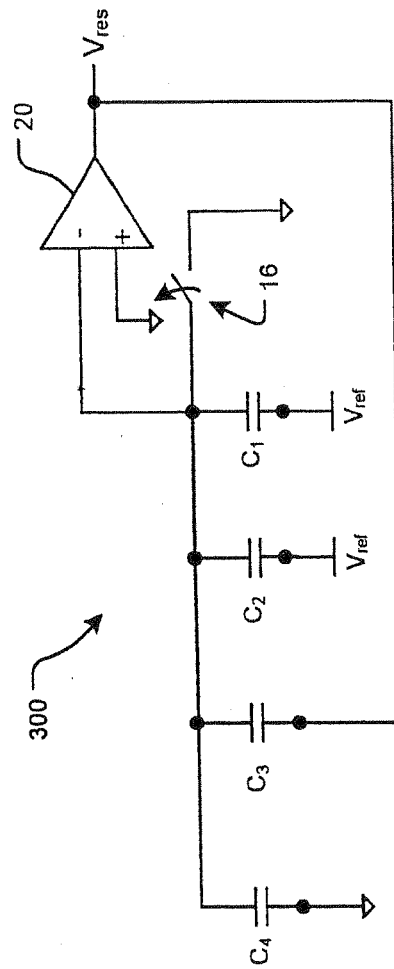


FIG. 12C

Switch Positions									
Switch	A		B		C		D		
	Sample	Residue Amp	Sample	Residue Amp	Sample	Residue Amp	Sample	Residue Amp	
4	Vin	G	Vin	G	Vin	G	Vin	F	
3	Vin	G	Vin	G	Vin	F	Vin	Vref	
2	Vin	G	Vin	F	Vin	Vref	Vin	Vref	
1	Vin	F	Vin	Vref	Vin	Vref	Vin	Vref	

FIG. 12D

Vin= input voltage
G=Ground
Vref= reference voltage
F=Feedback

**FIG. 13****FIG. 14**

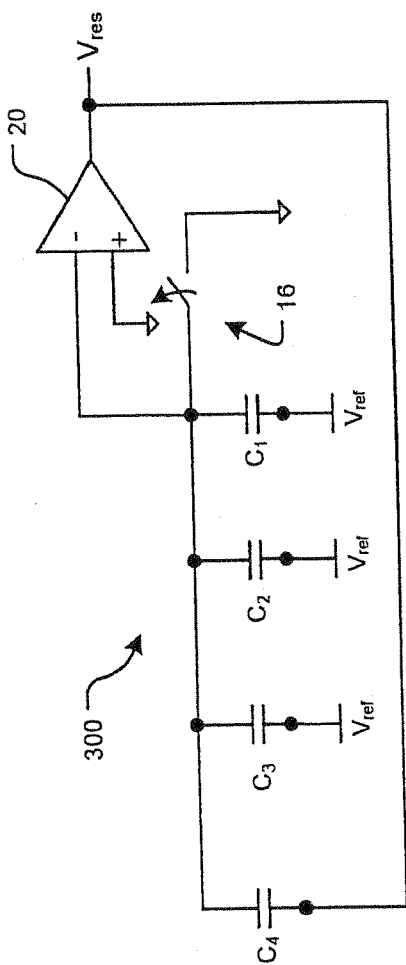


FIG. 15

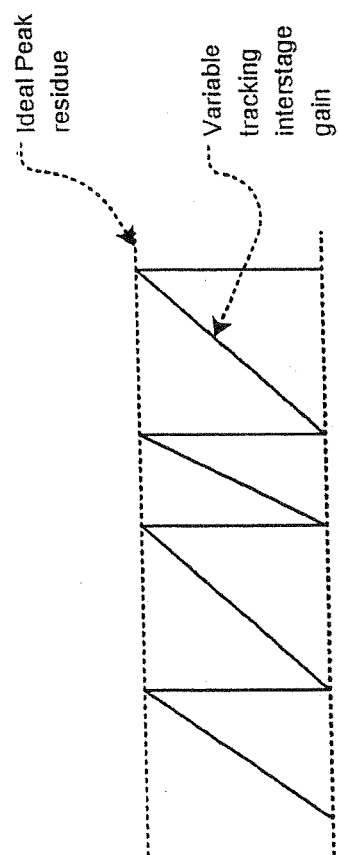


FIG. 16

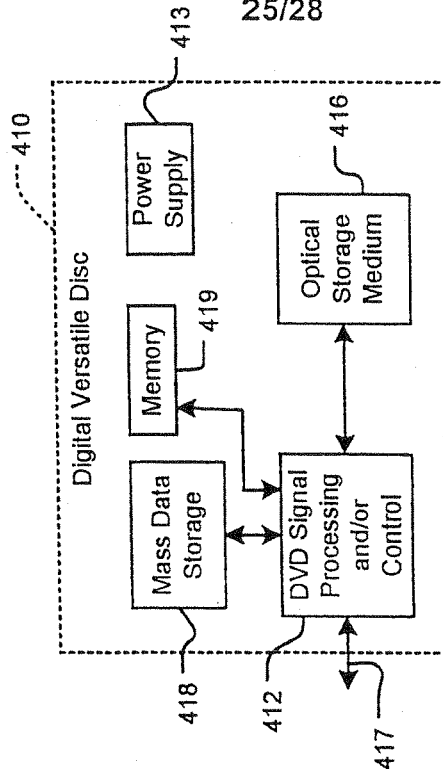


FIG. 17B

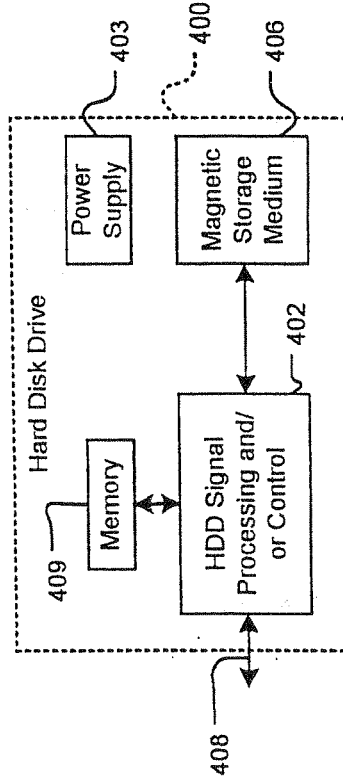


FIG. 17A

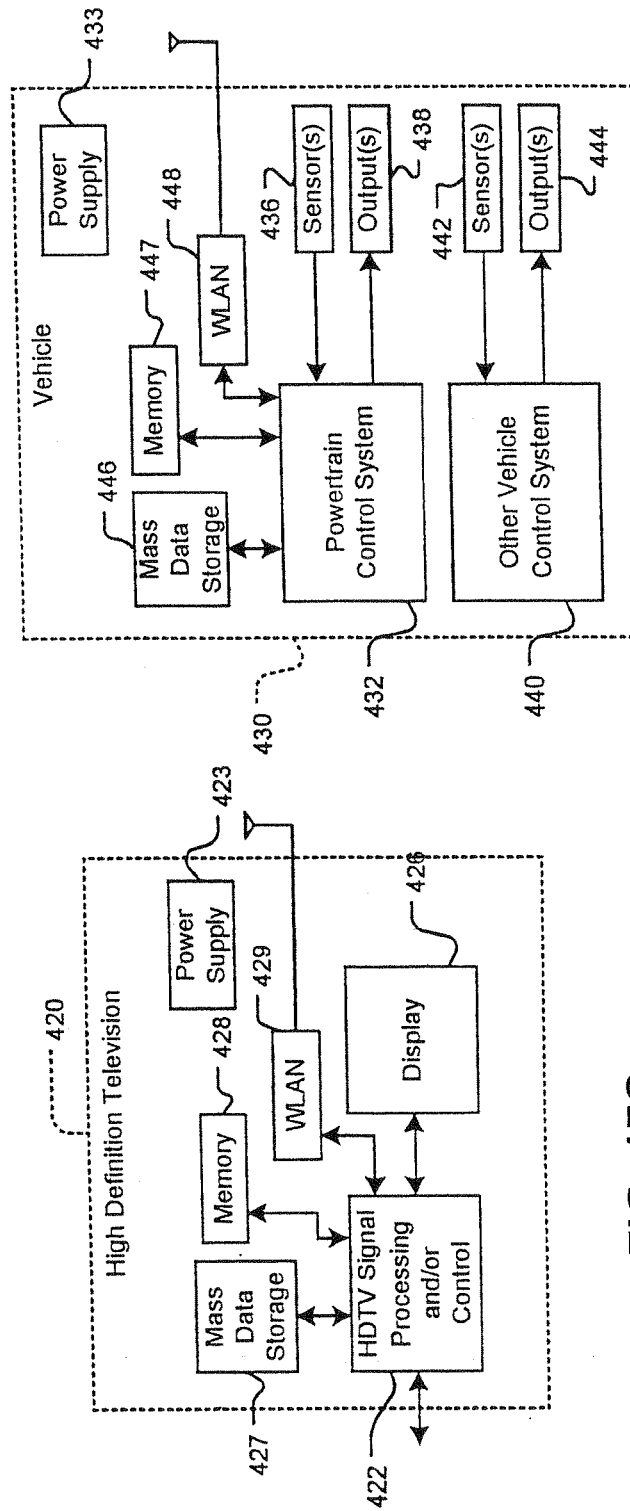


FIG. 17C

FIG. 17D

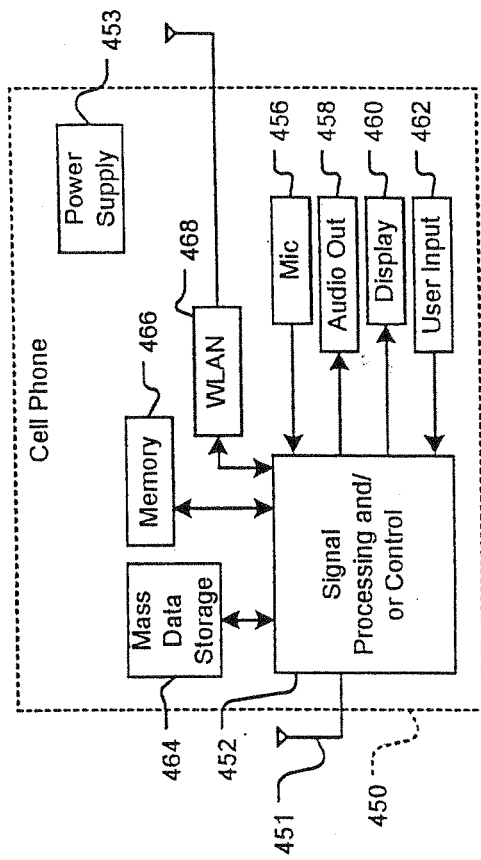


FIG. 17E

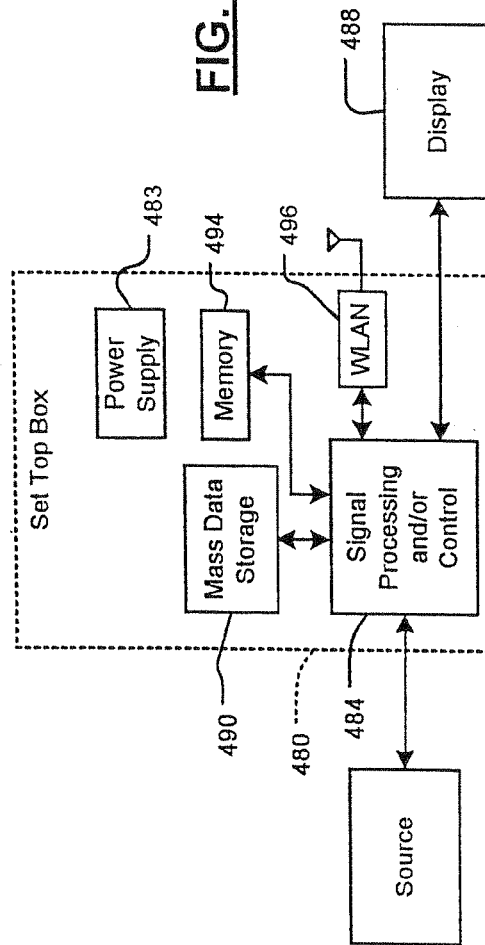
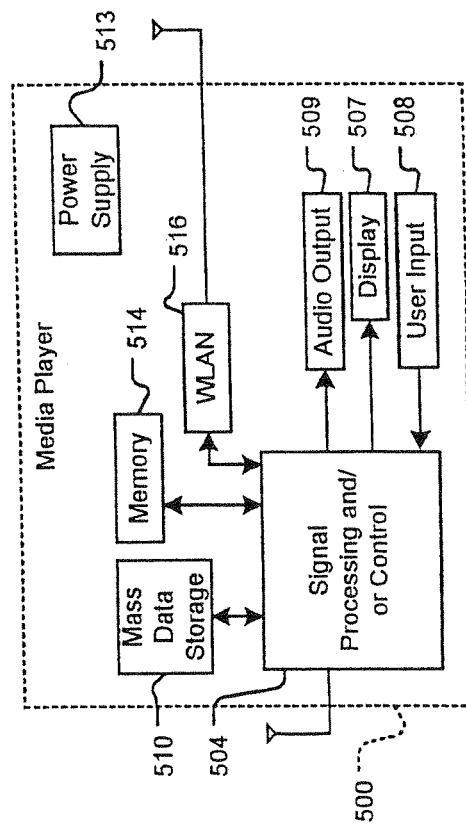


FIG. 17F

**FIG. 17G**