**FIG. 1A**
PRIOR ART

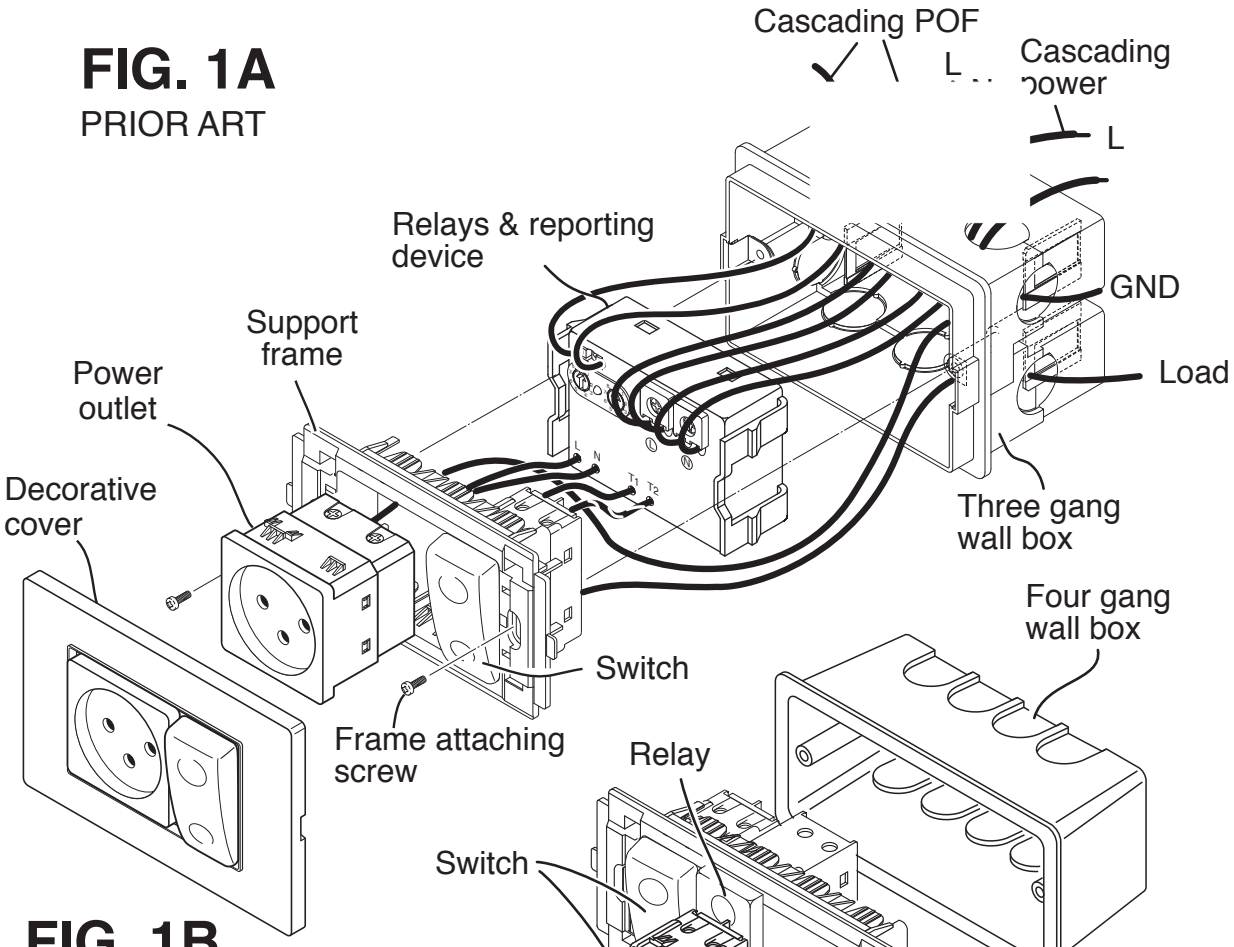



**FIG. 1B**
PRIOR ART

**FIG. 1C**
PRIOR ART

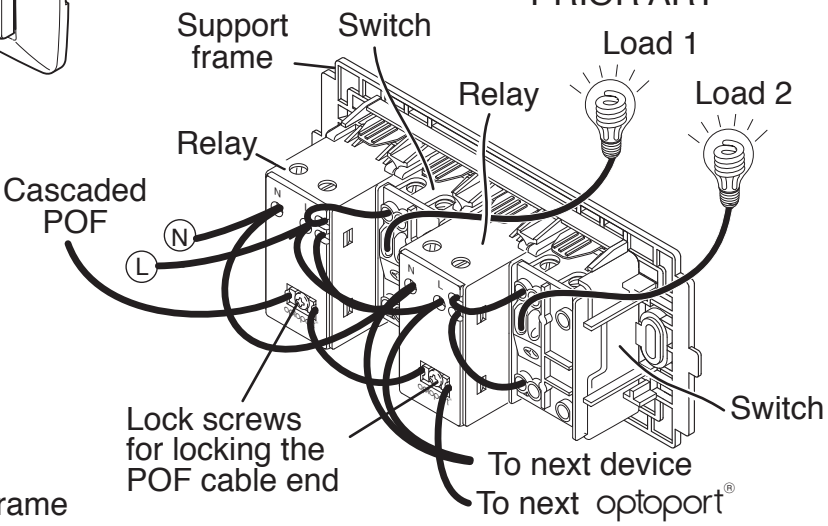
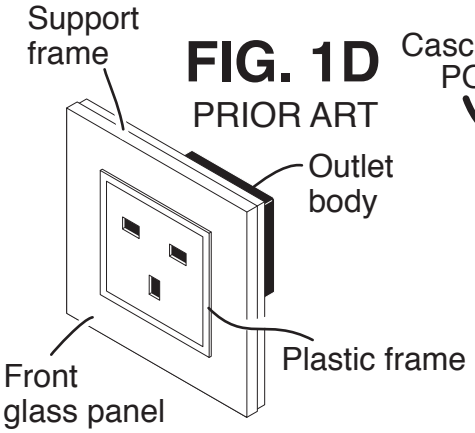
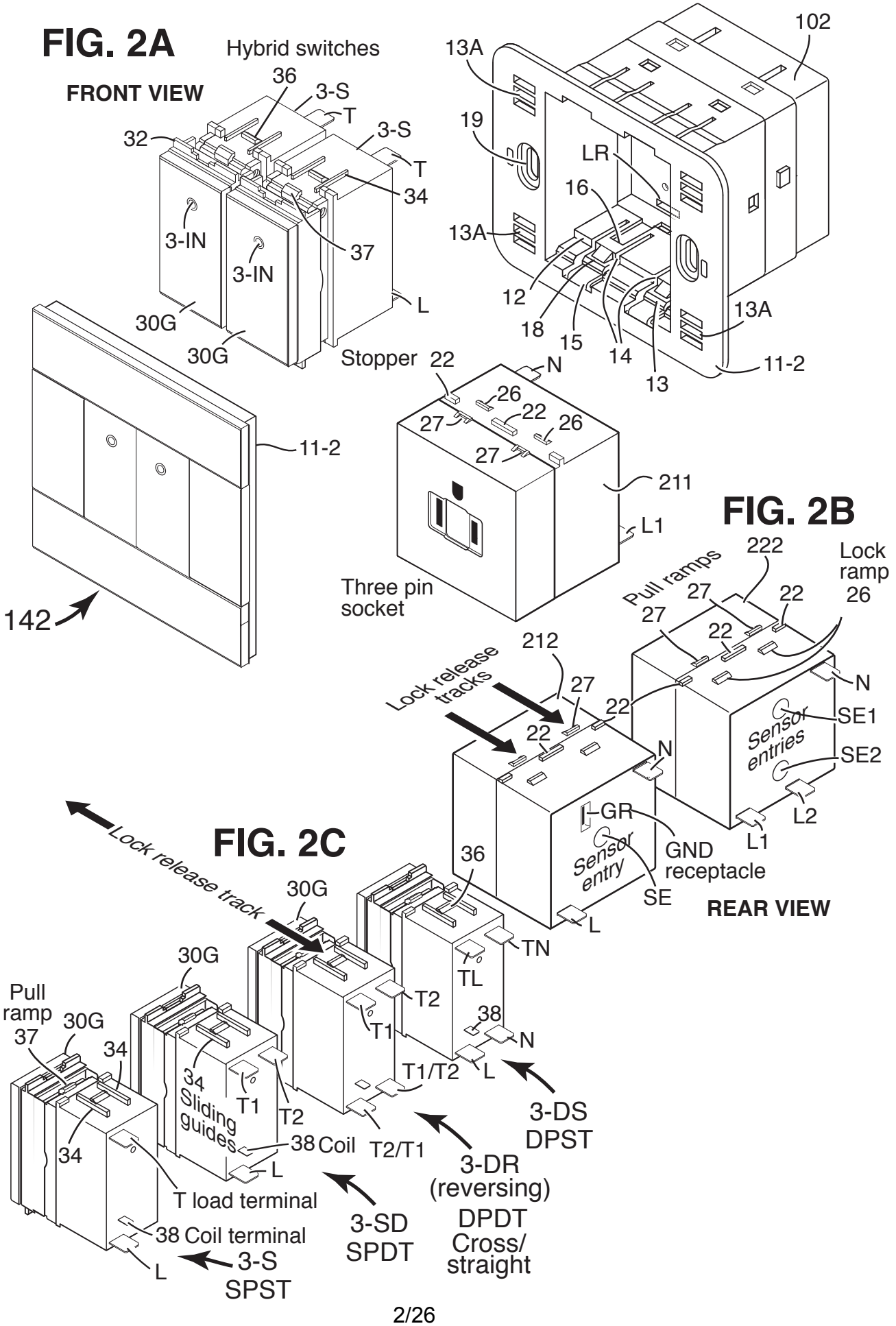
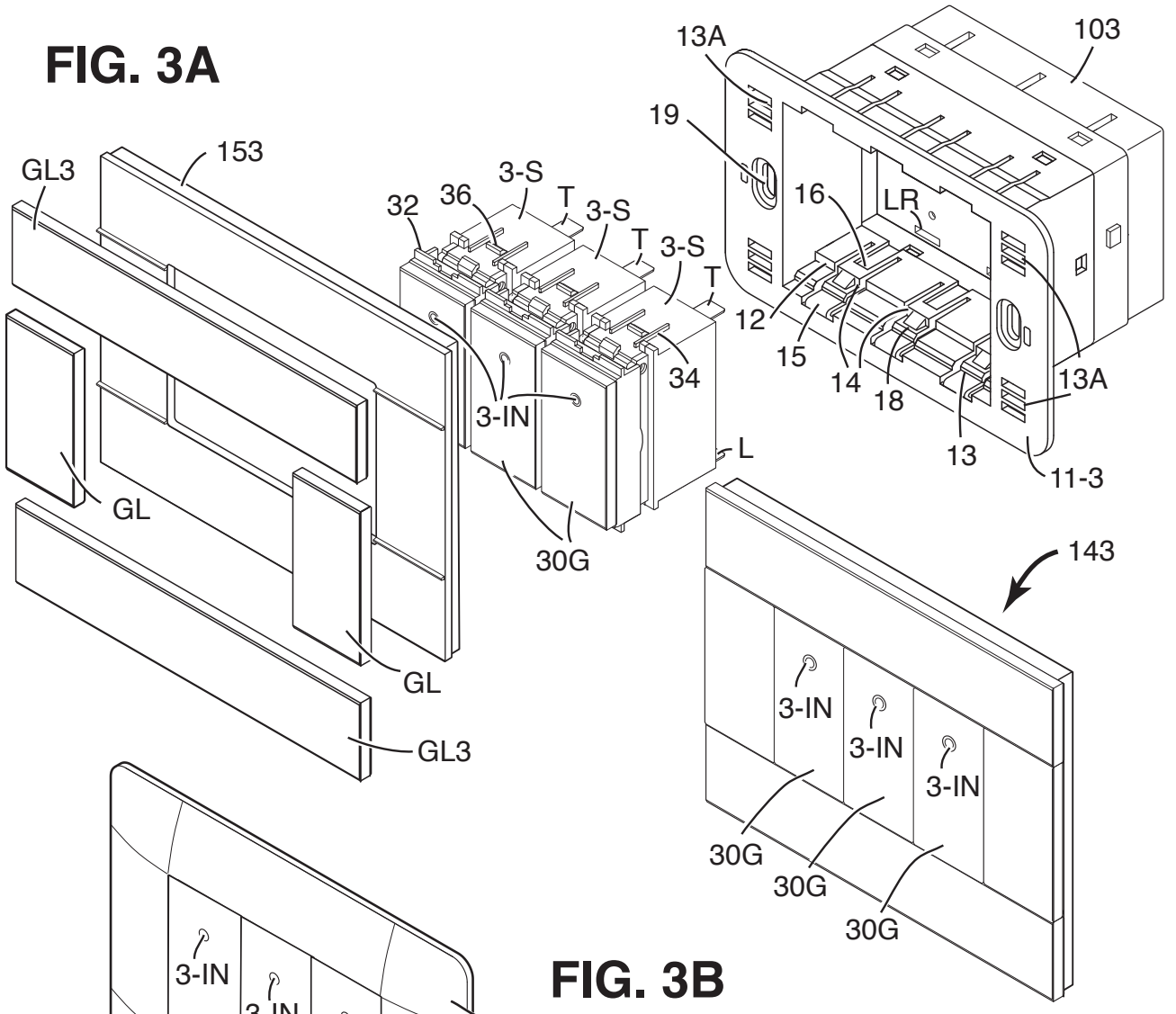



**FIG. 1D**
PRIOR ART




FIG. 2A
Hybrid switches
FRONT VIEW
36
3-S
T
3-S
T
32
34
3-IN
3-IN
37
L
30G
30G
Stopper
11-2
142
102
13A
19
LR
16
13A
12
18
15
14
13
13A
11-2
22
N
26
27
22
26
27
211
L1
Three pin
socket
FIG. 2B
222
Pull ramps
27
22
Lock
ramp
26
27
22
212
Lock release
tracks
27
22
22
N
SE1
Sensor
entries
SE2
N
GR
L2
Sensor
entry
GND
receptacle
L1
SE
L
REAR VIEW
FIG. 2C
Lock release track
36
30G
TN
TL
30G
T2
Pull
ramp
37
30G
34
T1
38
N
34
Sliding
guides
T1
T2
T1/T2
L
3-DS
DPST
34
38 Coil
T2/T1
T load terminal
L
3-DR
(reversing)
DPDT
Cross/
straight
3-SD
SPDT
38 Coil terminal
L
3-S
SPST

# FIG. 3A


13A
103
19
153
GL3
3-S
T
32
36
3-S
T
3-S
T
16
LR
12
15
14
18
13A
34
3-IN
L
13
11-3
GL
30G
143
GL
3-IN
3-IN
3-IN
GL3
30G
30G
30G

# FIG. 3B

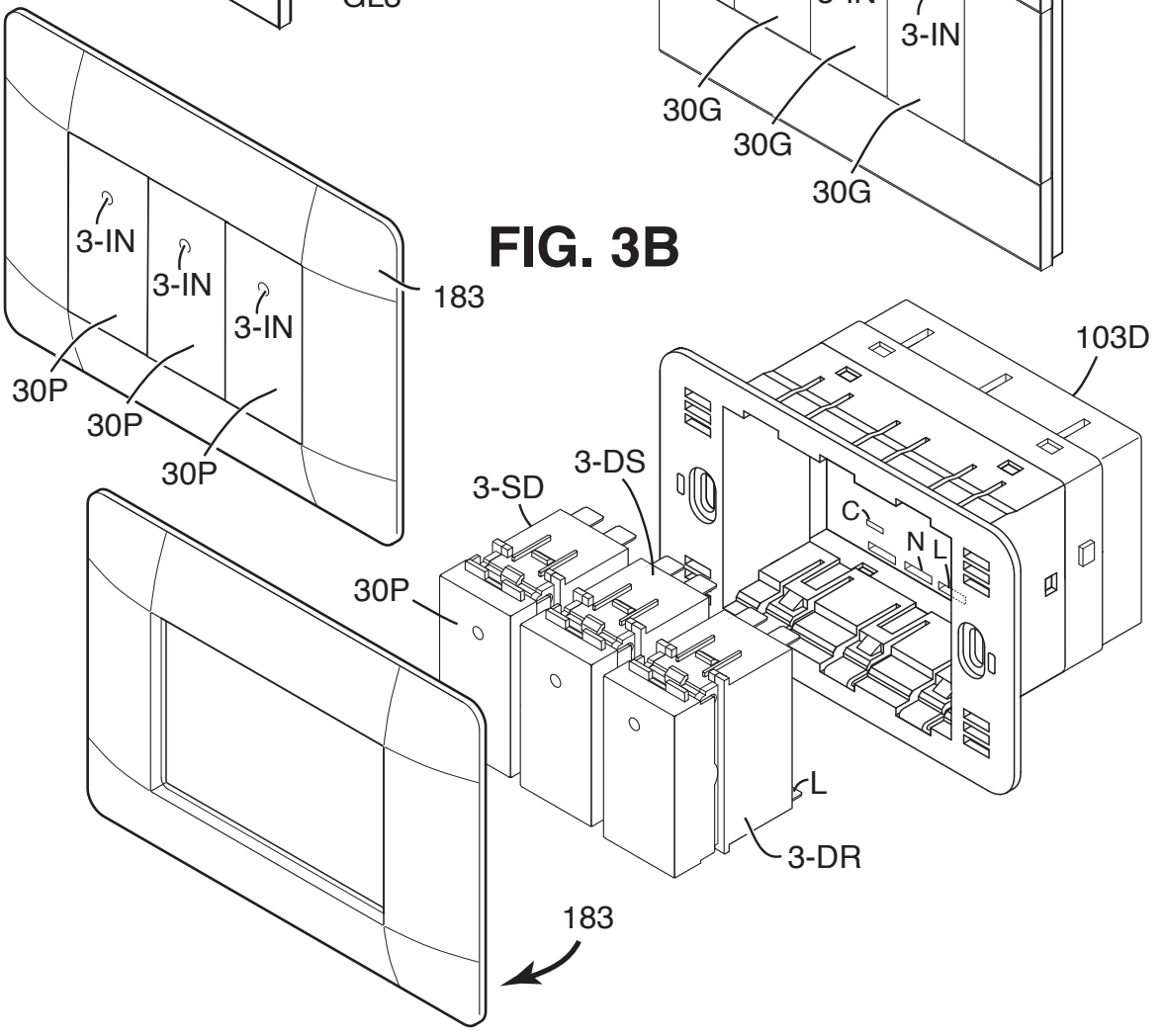
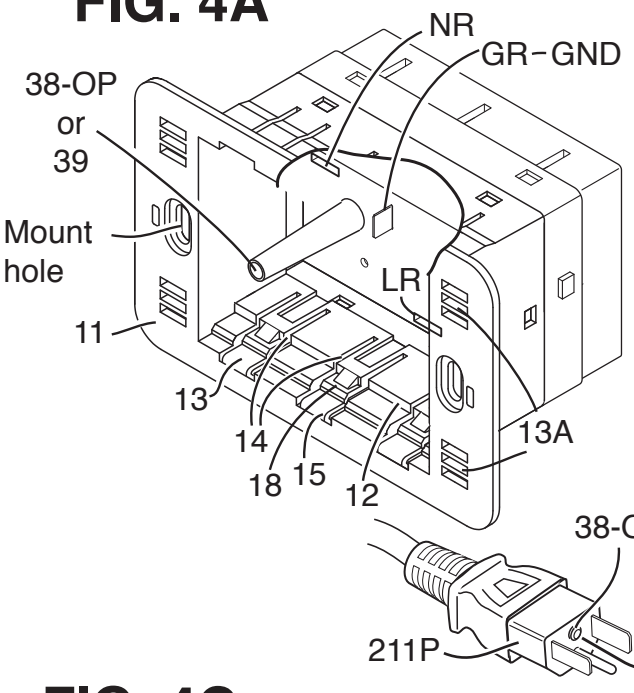

3-IN
3-IN
3-IN
183
30P
30P
30P
103D
3-DS
3-SD
C
N
L
30P
L
3-DR
183

FIG. 4A



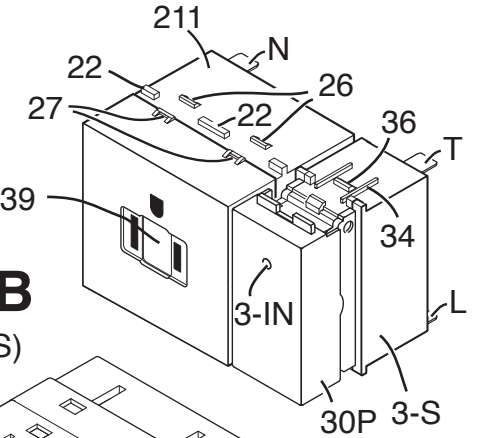




FIG. 4B

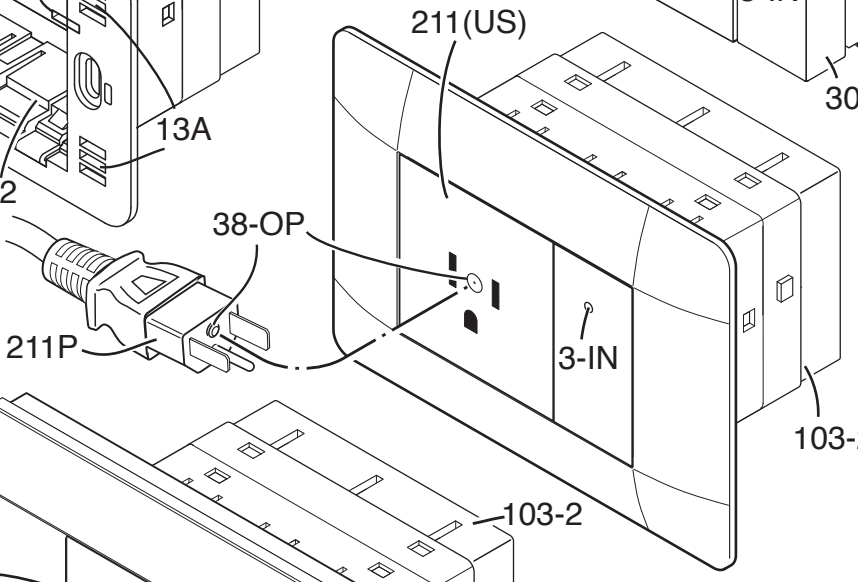
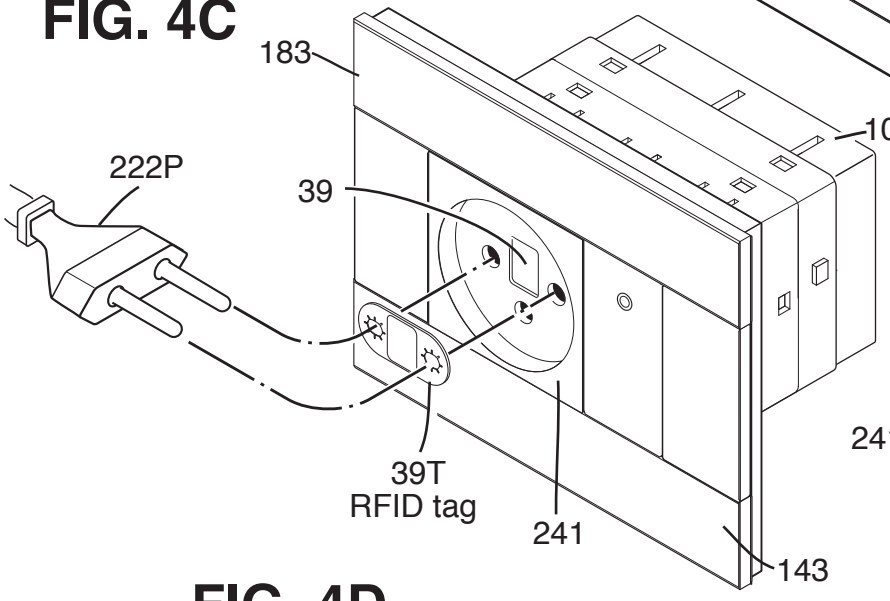



FIG. 4C



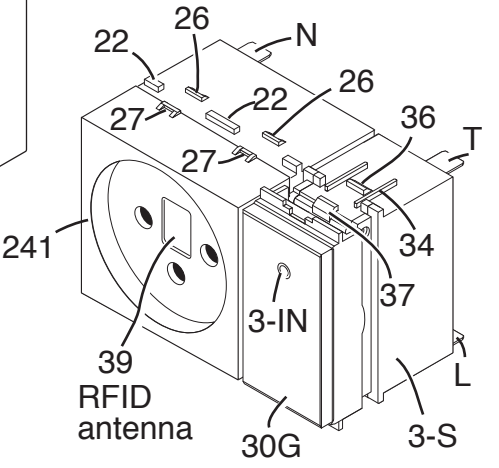
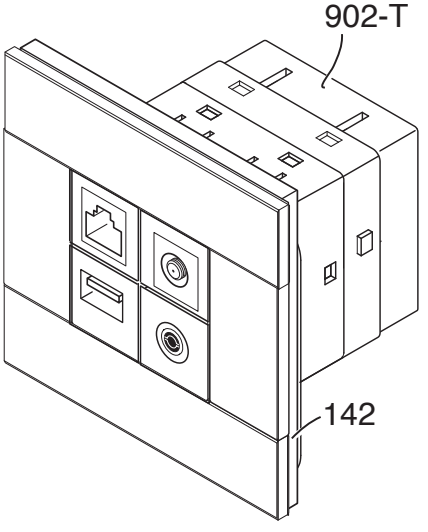




FIG. 4D



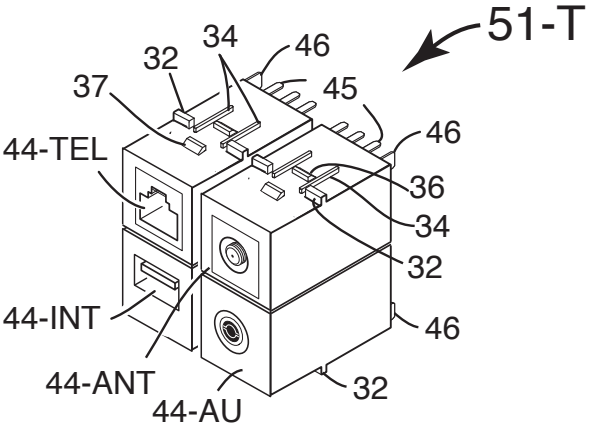



FIG. 5A

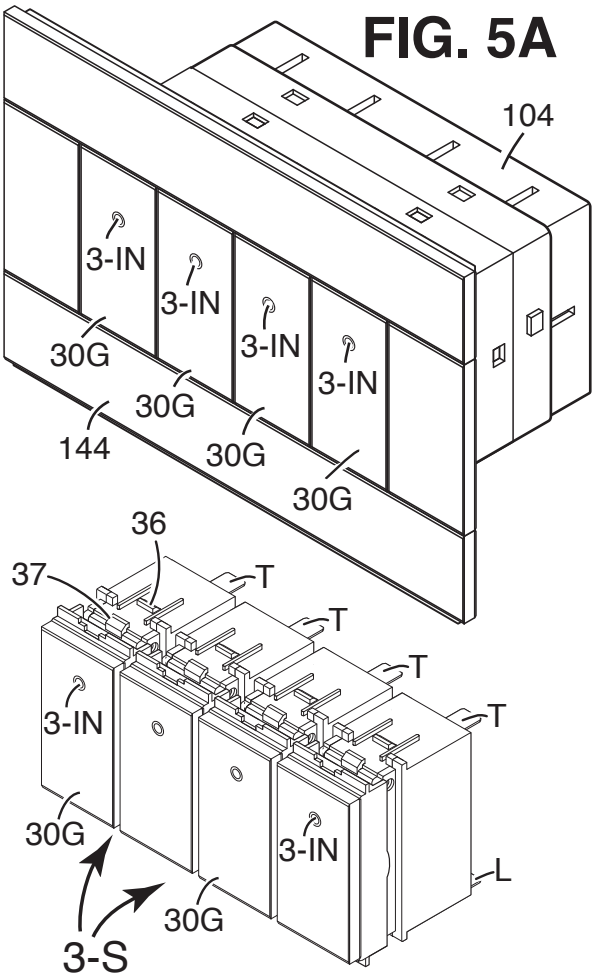



FIG. 5B

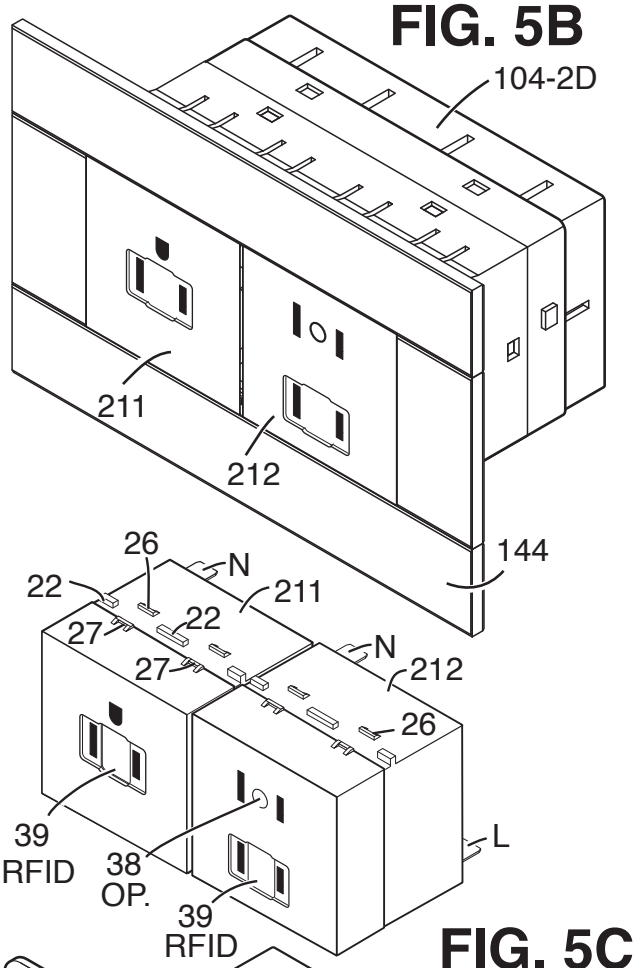



FIG. 5C

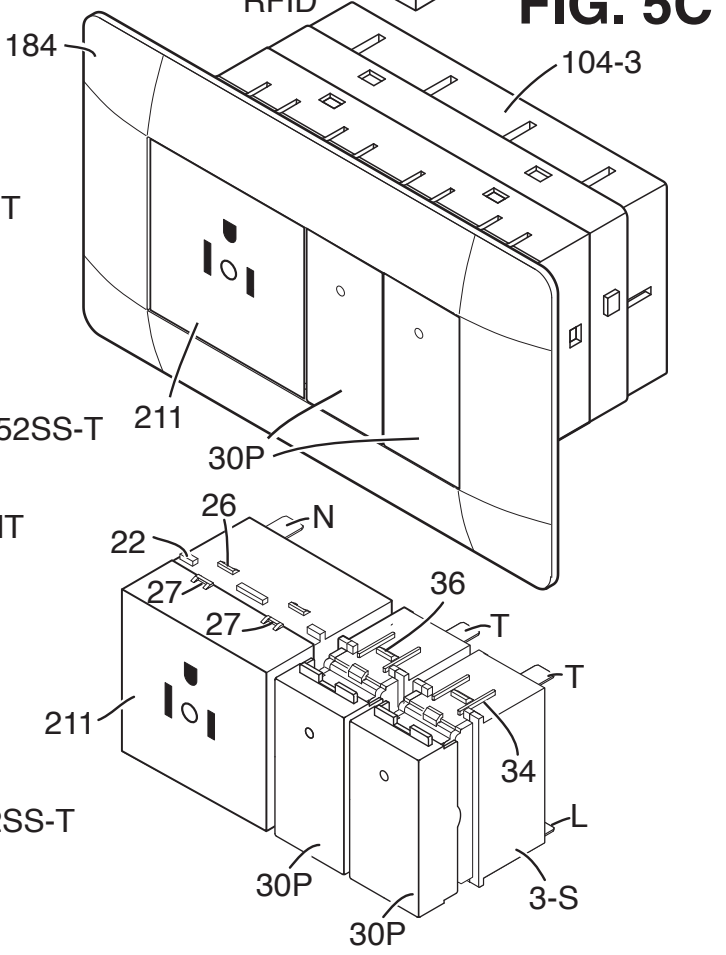



FIG. 5D

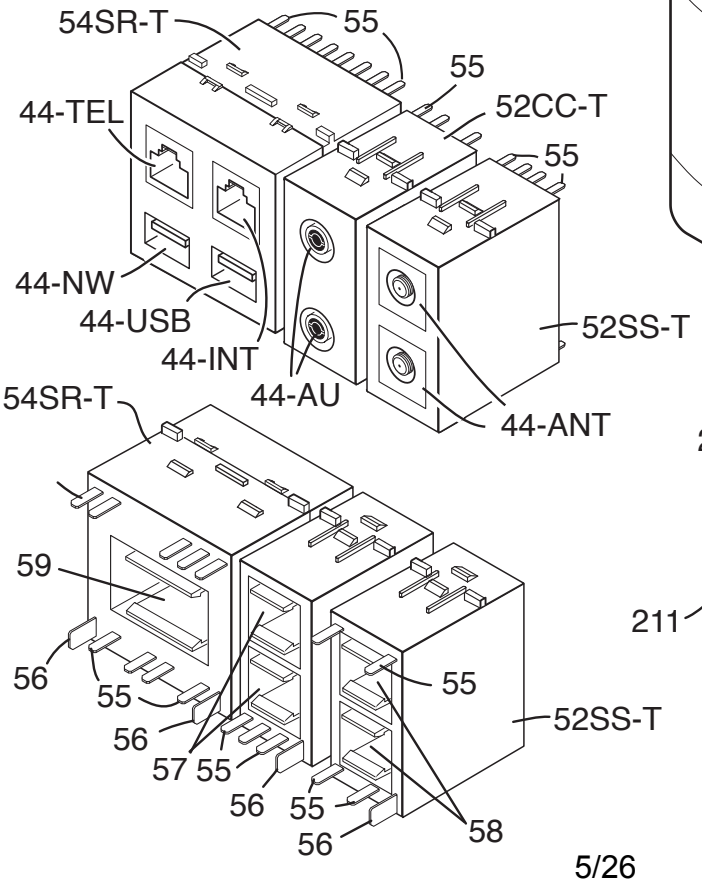


FIG. 6A

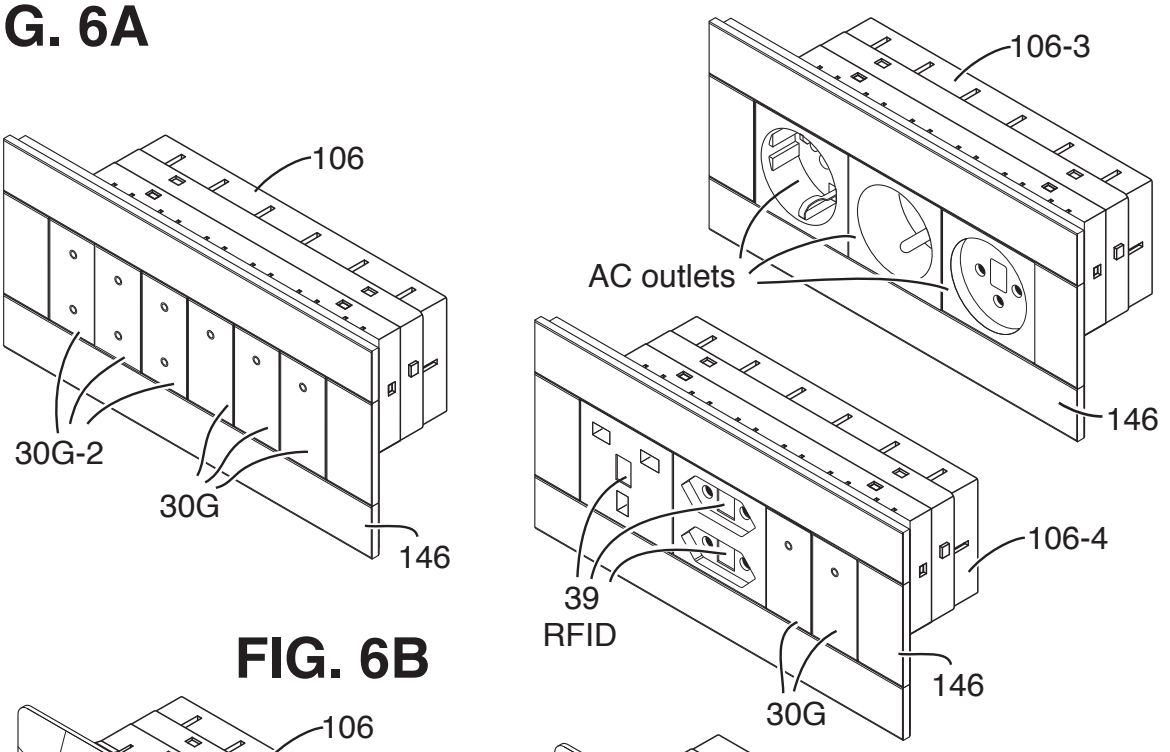



FIG. 6B

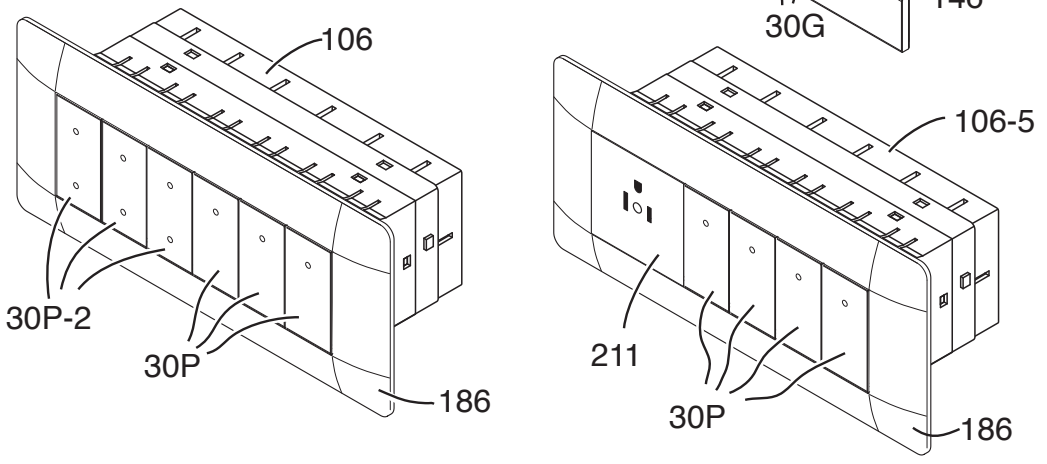
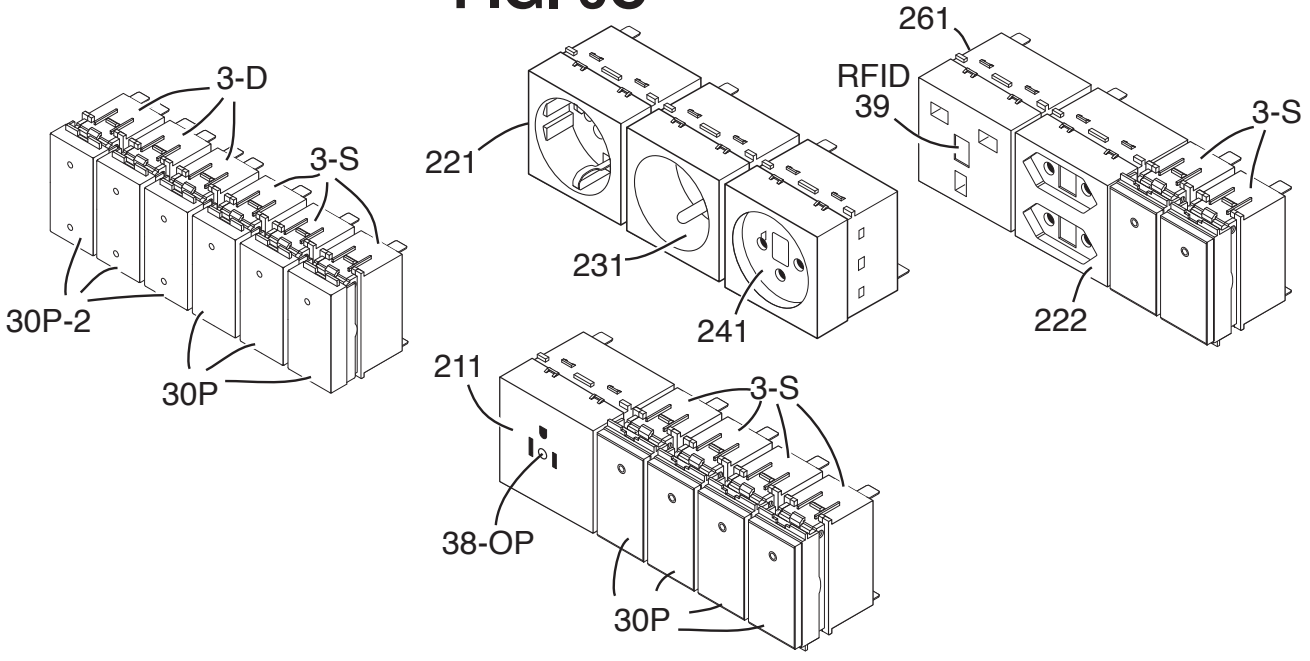



FIG. 6C



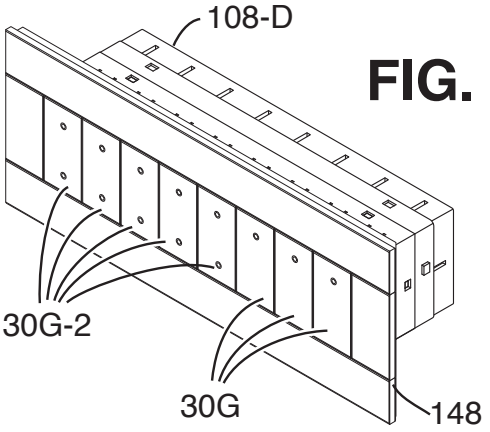
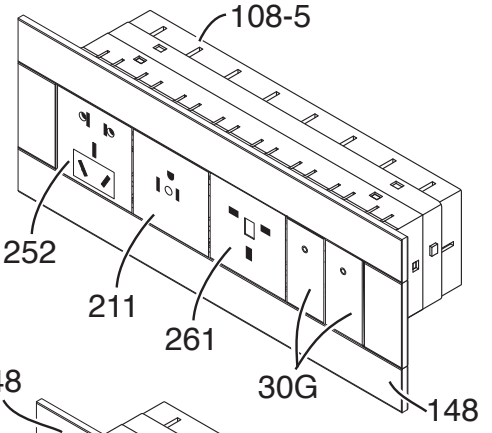



FIG. 7A



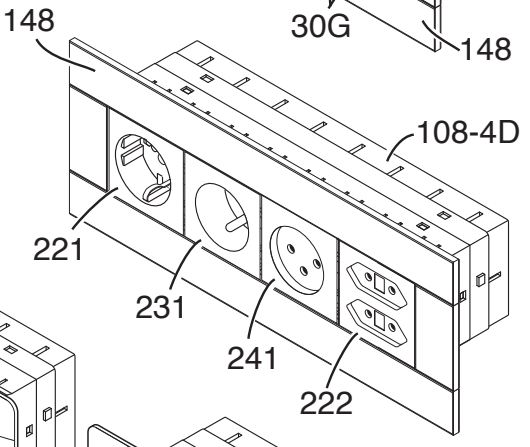
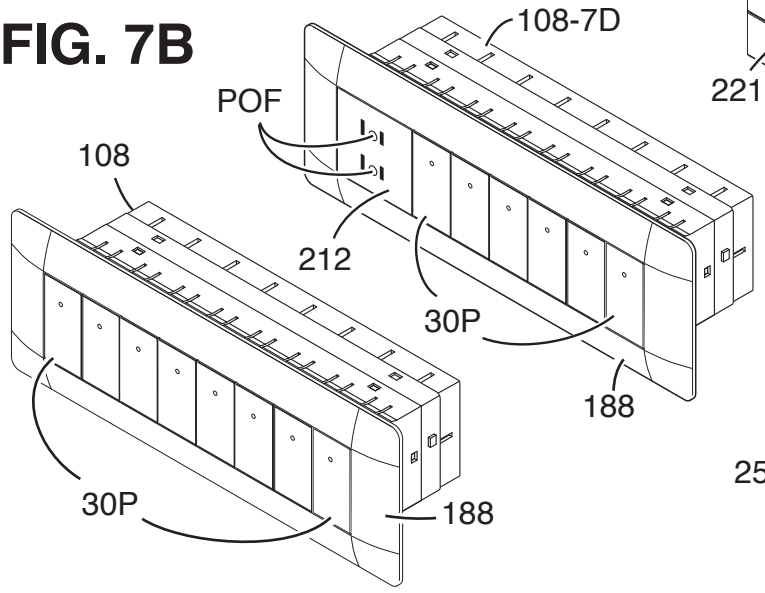




FIG. 7B



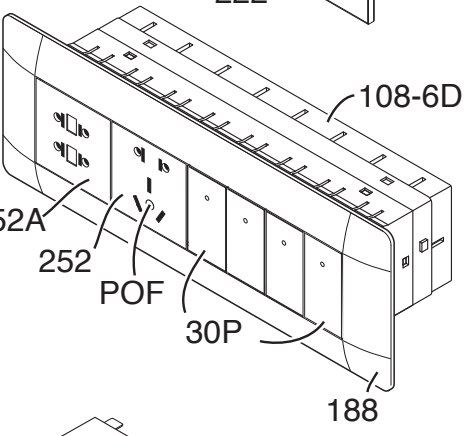
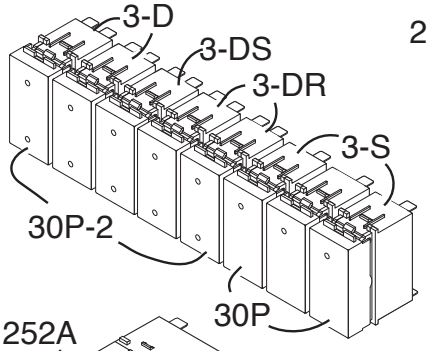
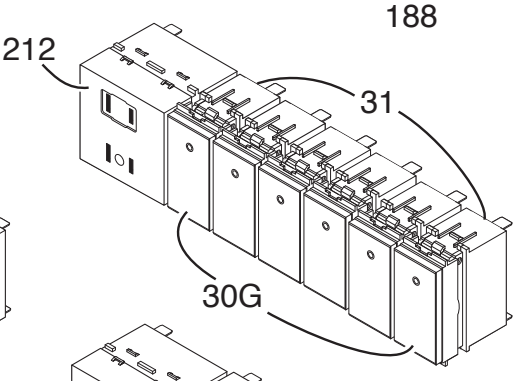
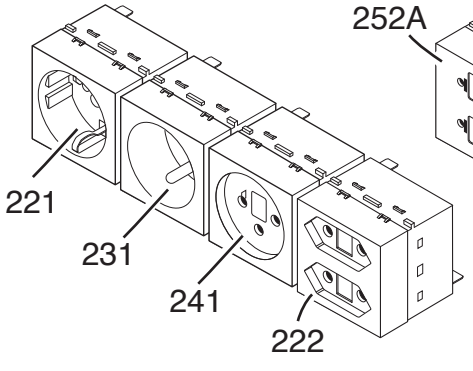
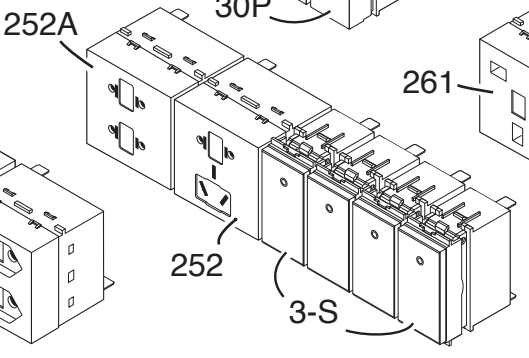



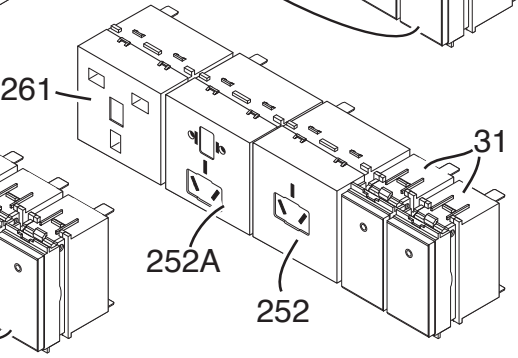

FIG. 7C



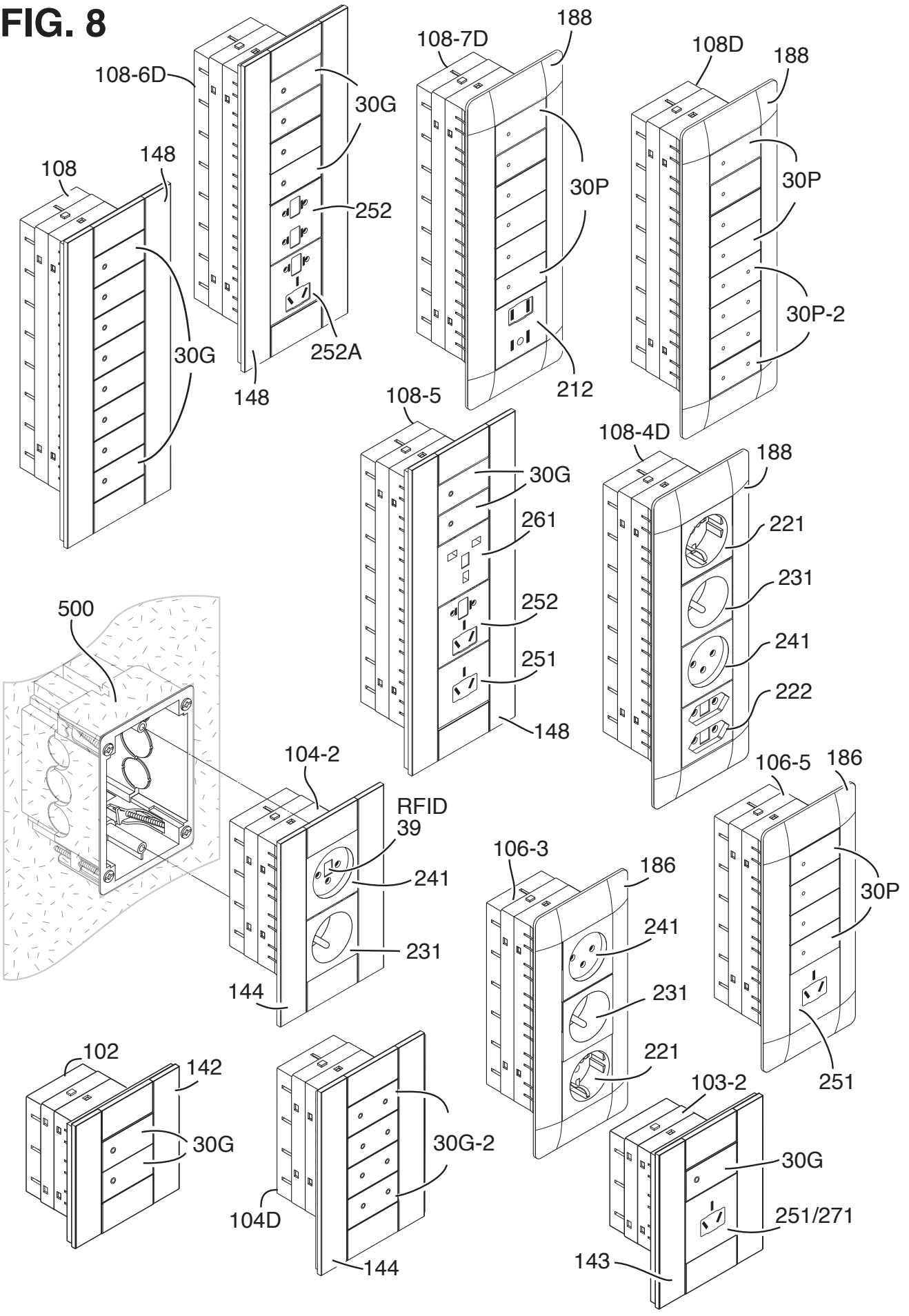



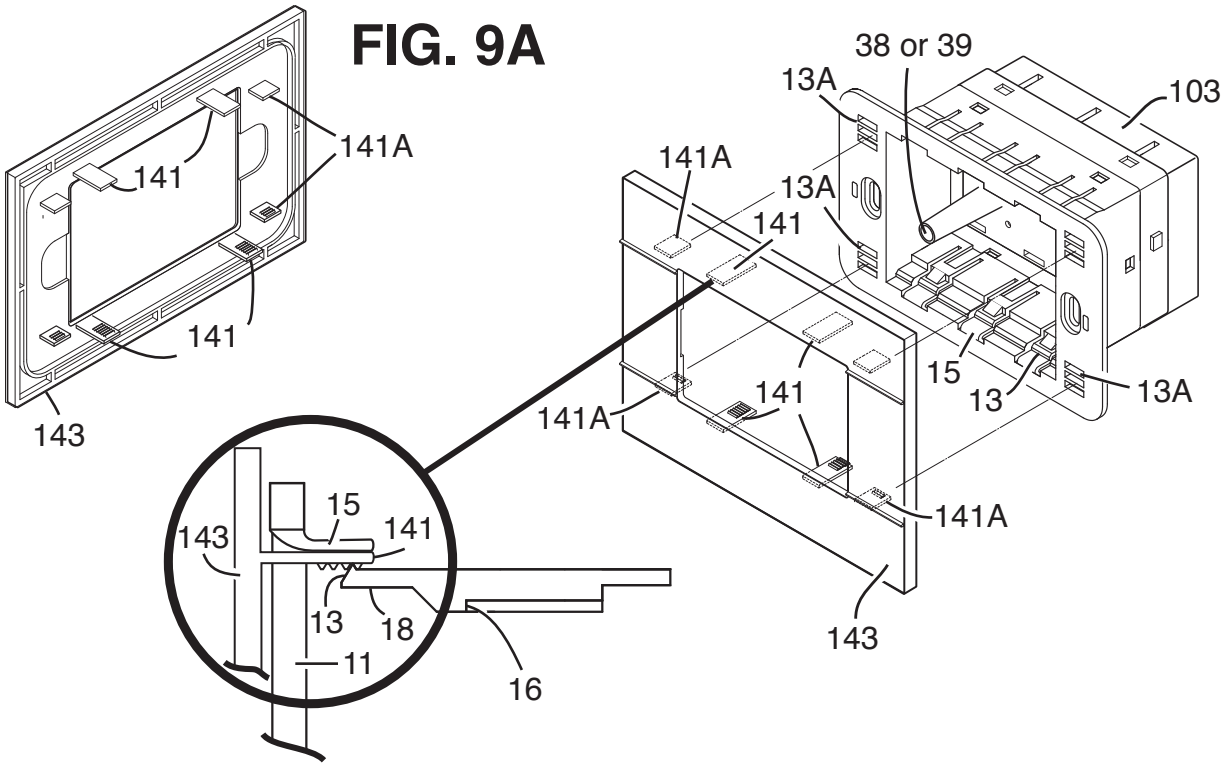



# FIG. 8


108-6D
30G
252
252A
148
108
148
30G
108-7D
188
30P
212
108D
188
30P
30P-2
108-5
30G
261
252
251
148
108-4D
188
221
231
241
222
500
104-2
RFID
39
241
231
144
106-5
186
30P
251
106-3
186
241
231
221
102
142
30G
30G-2
104D
144
103-2
30G
251/271
143

# FIG. 9A


141A
141
141
143
38 or 39
13A
103
141A
13A
141
15
13
13A
141A
141
141A
143
15
141
143
13
18
11
16

# FIG. 9B

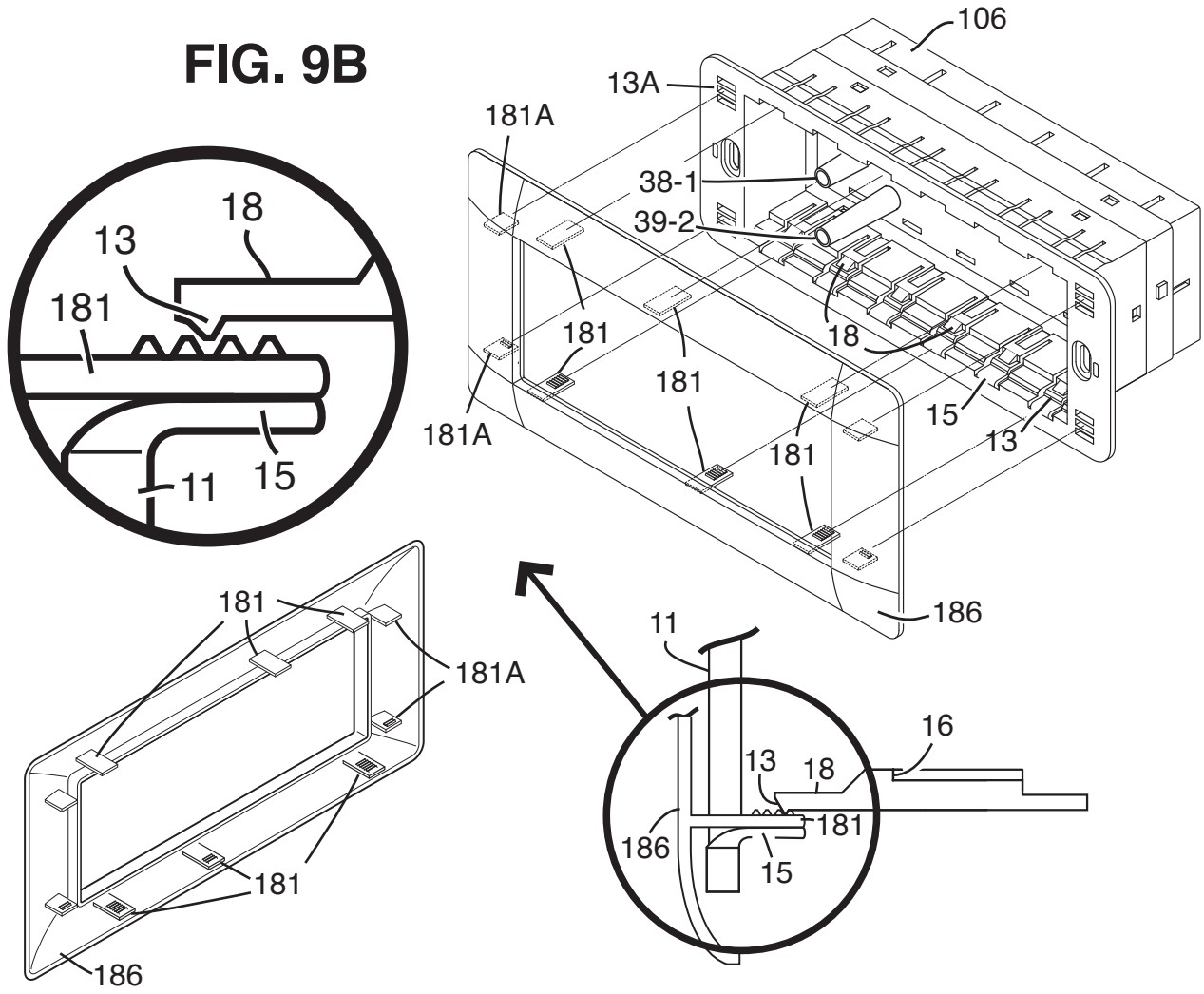

18
13
181
11
15
106
13A
181A
38-1
39-2
181
181
181
181A
18
15
13
181
186
181
181A
181
186
11
16
13
18
181
186
15

**FIG. 10A**

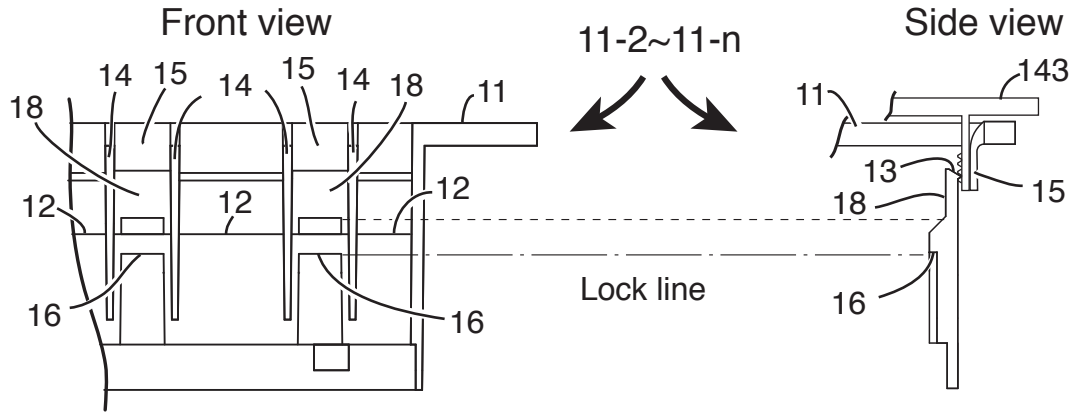



**FIG. 10B**

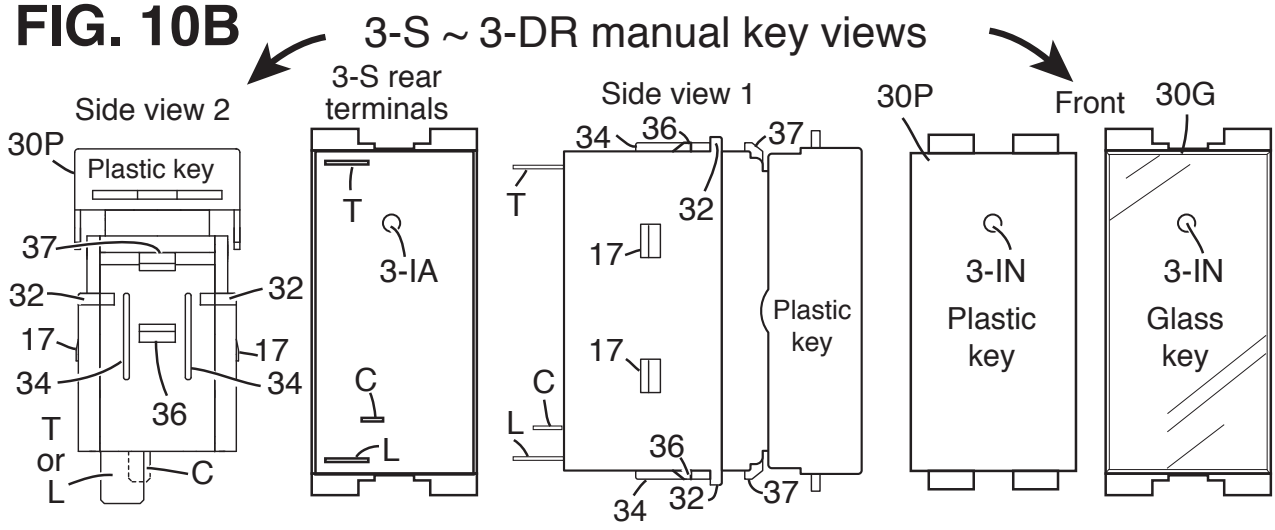



**FIG. 10C**

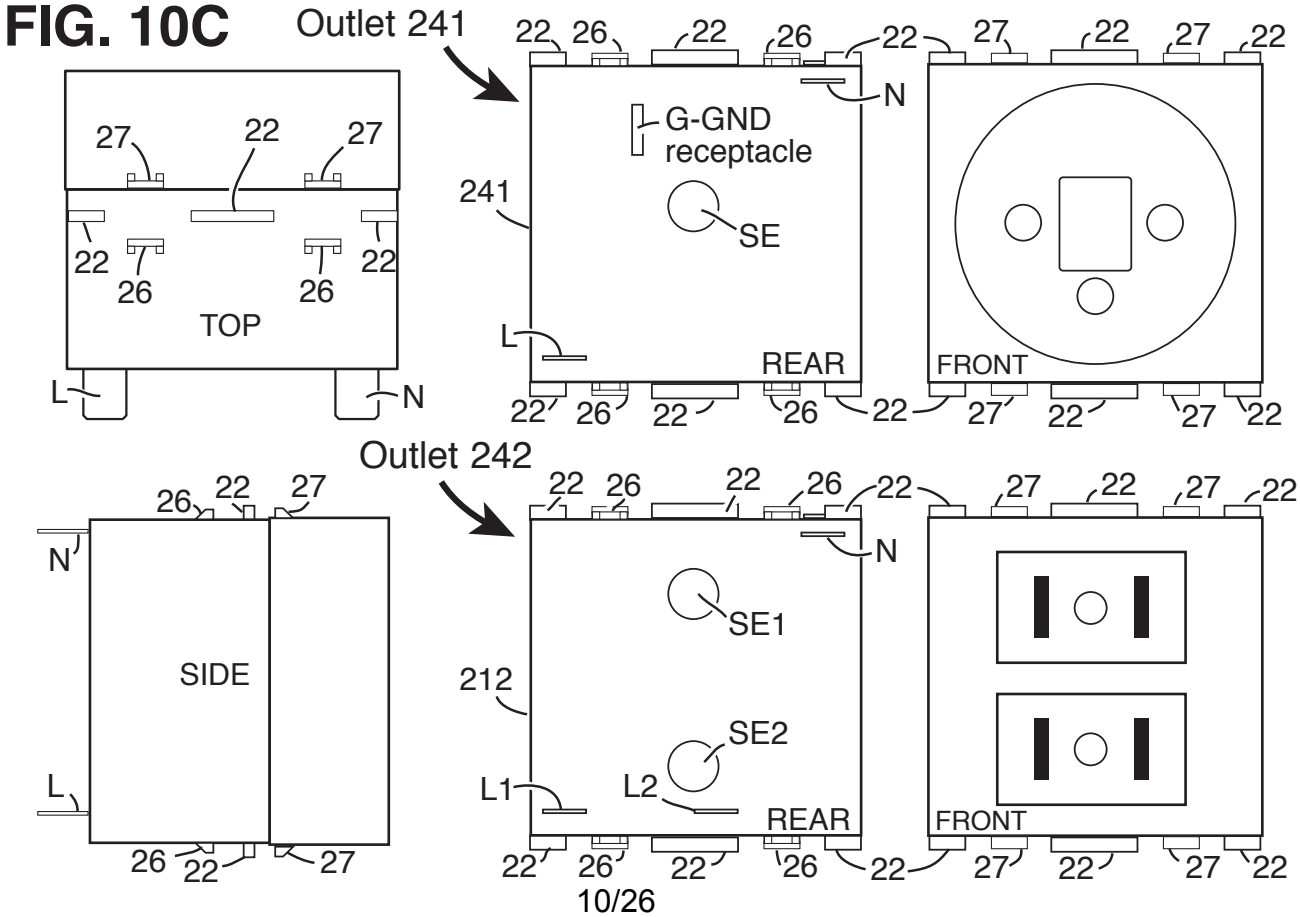


FIG. 11A

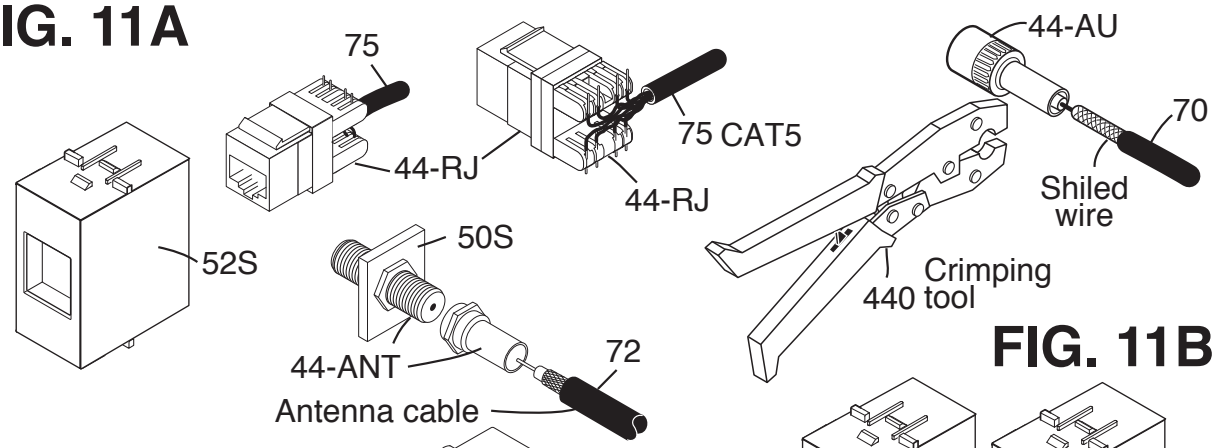



FIG. 11B

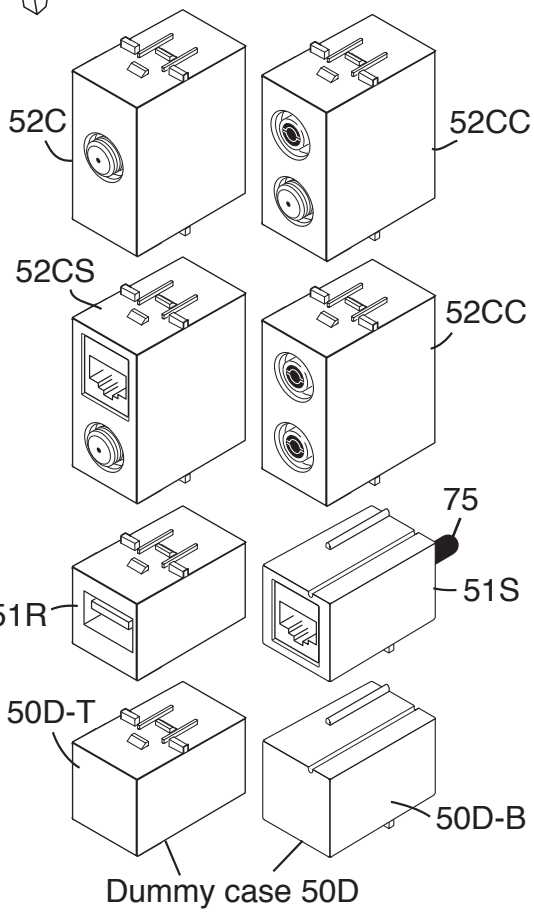



FIG. 11C

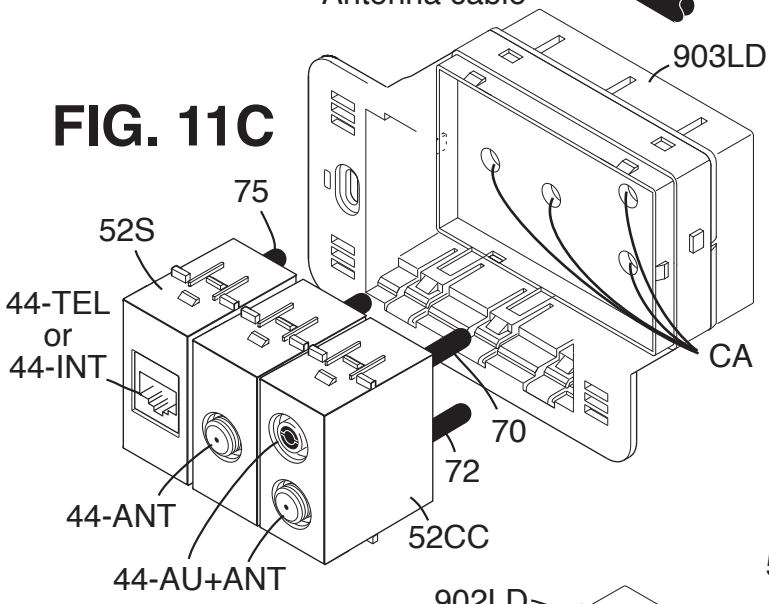



FIG. 11D

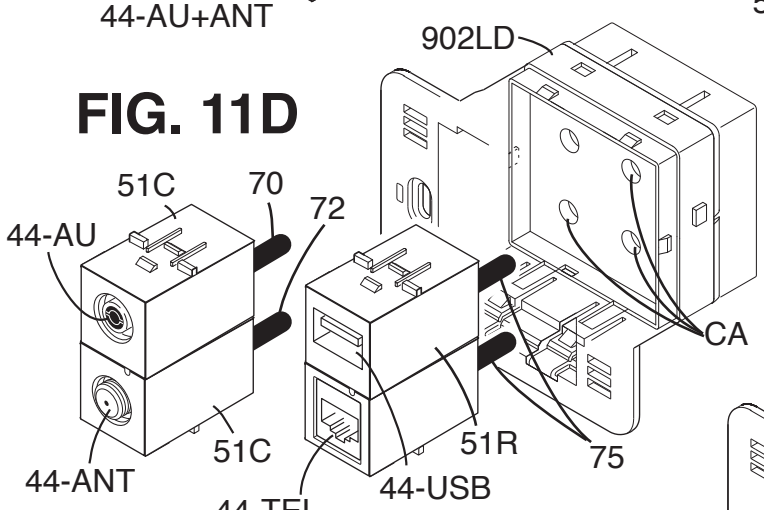



FIG. 11E

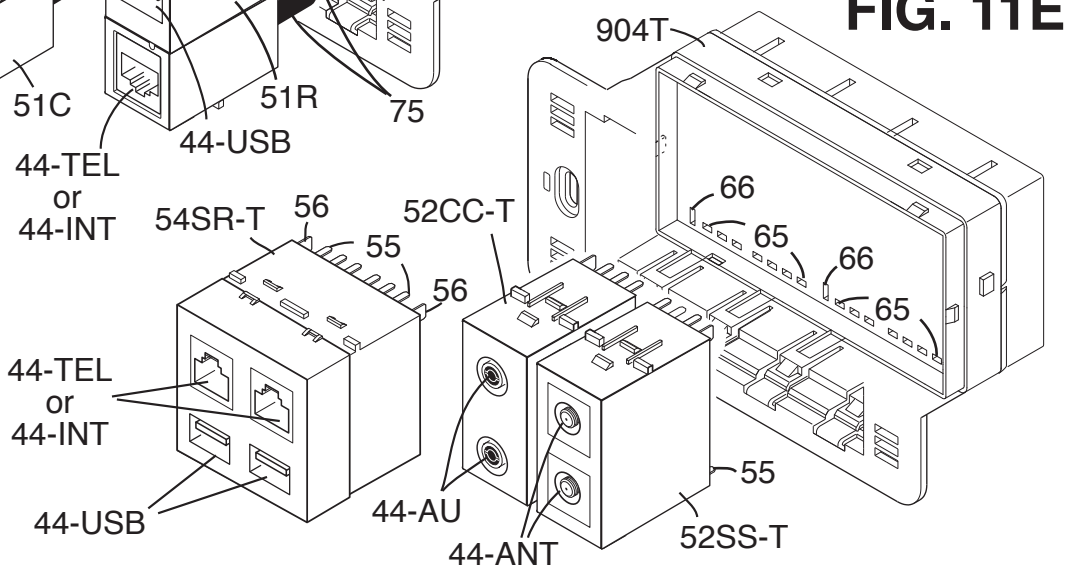


FIG. 12A

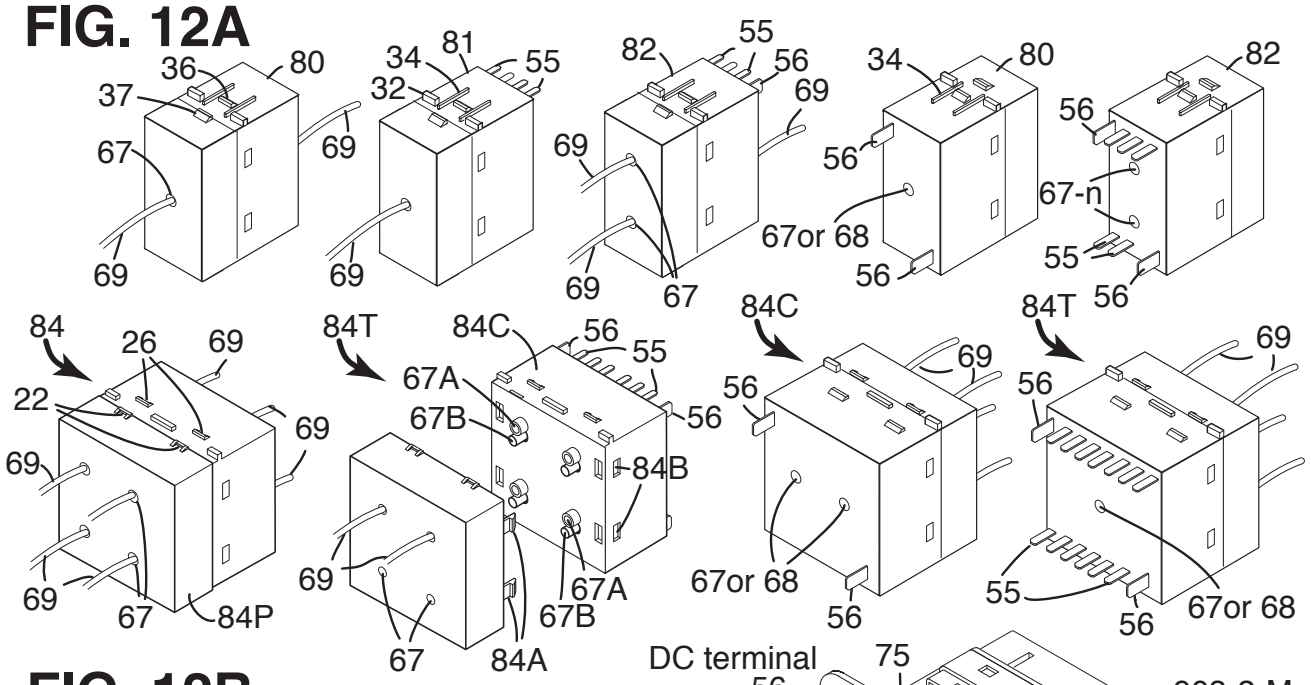
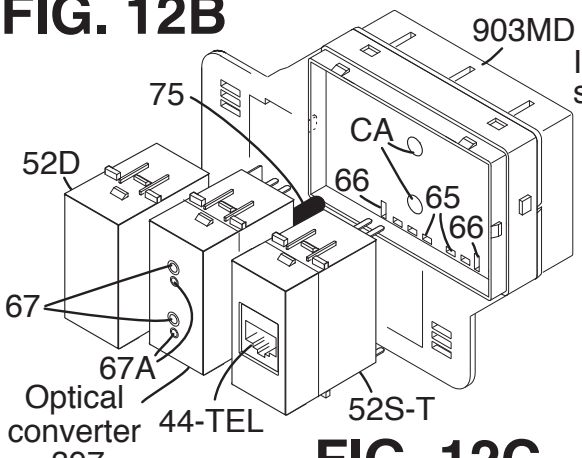



FIG. 12B



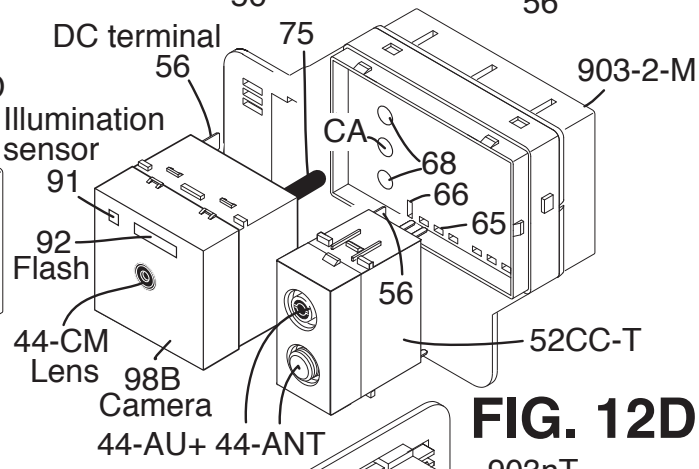
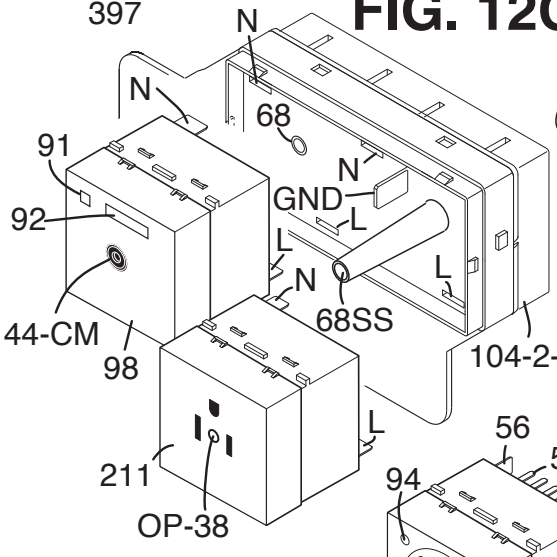




FIG. 12C



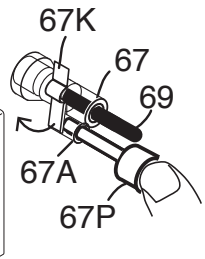
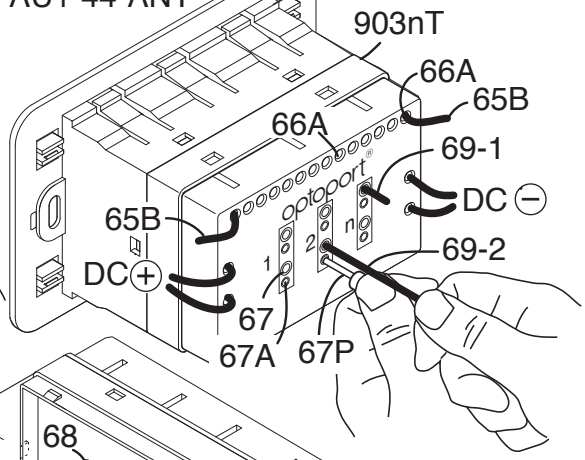




FIG. 12D



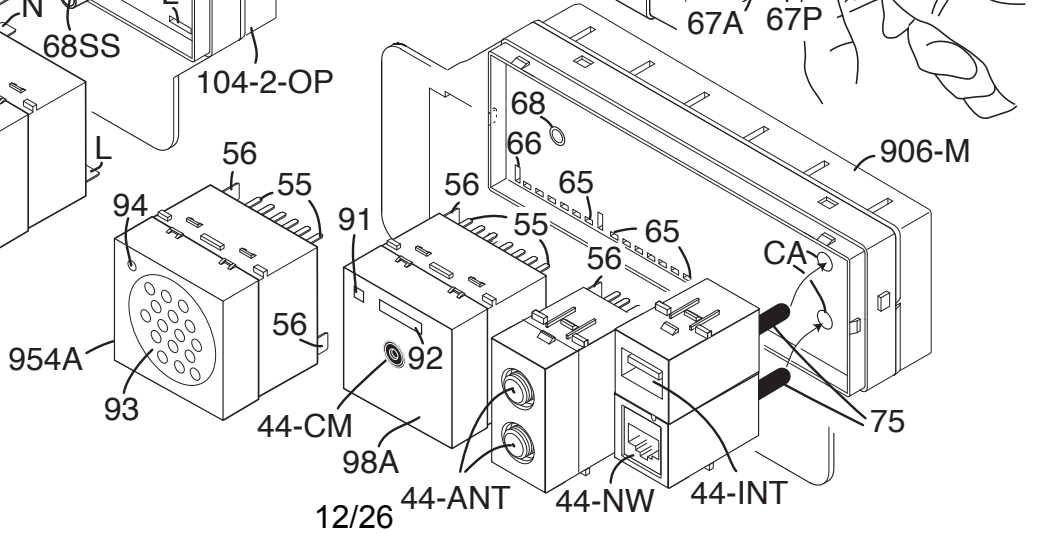



FIG. 13A

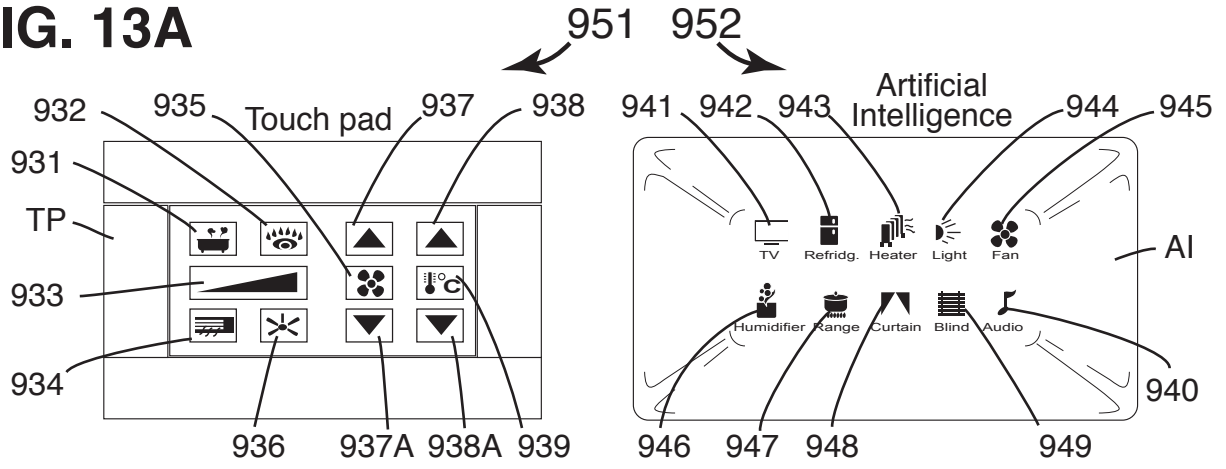



FIG. 13B

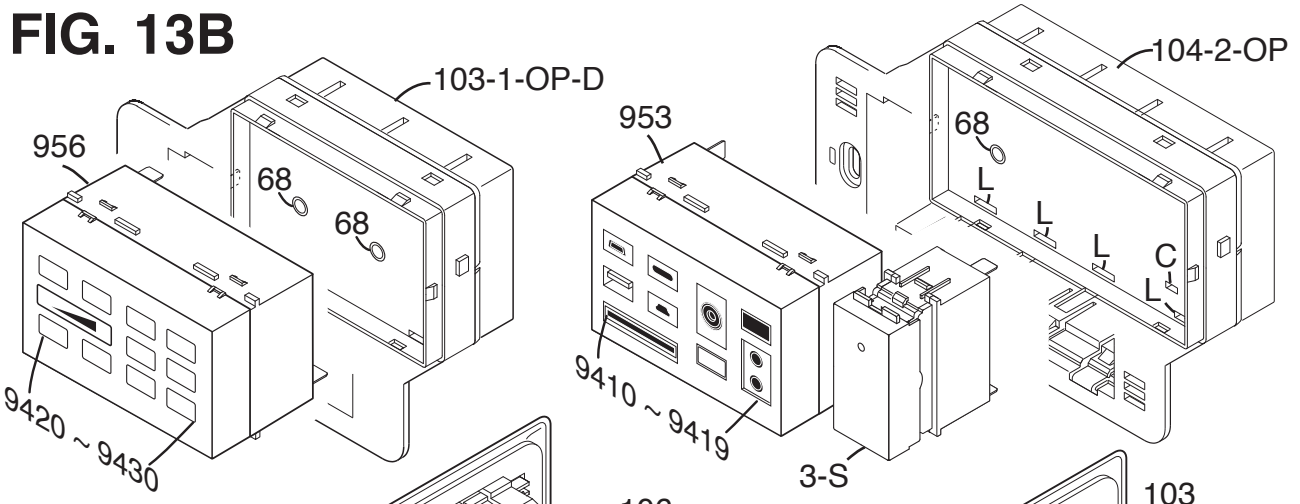
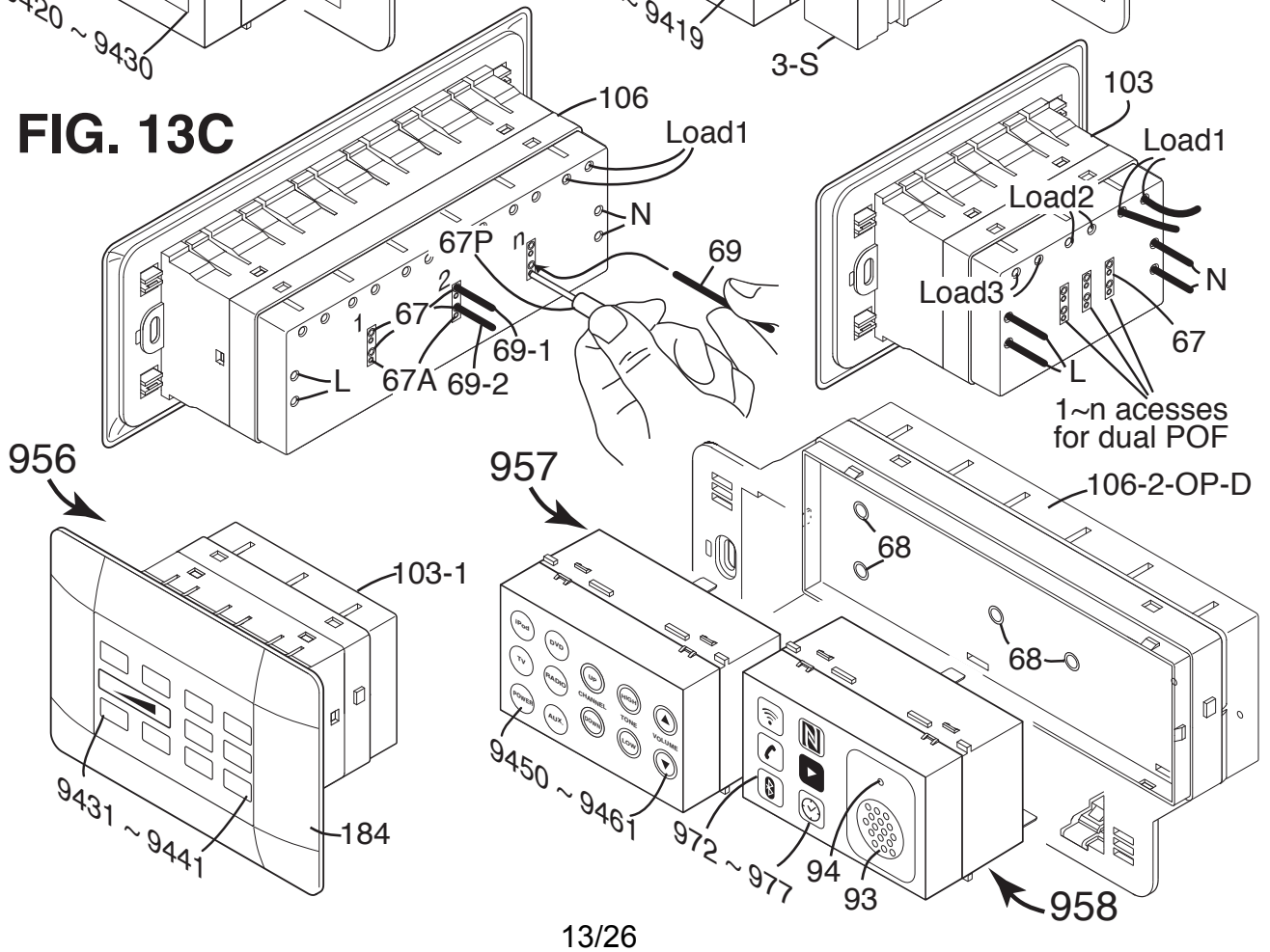



FIG. 13C



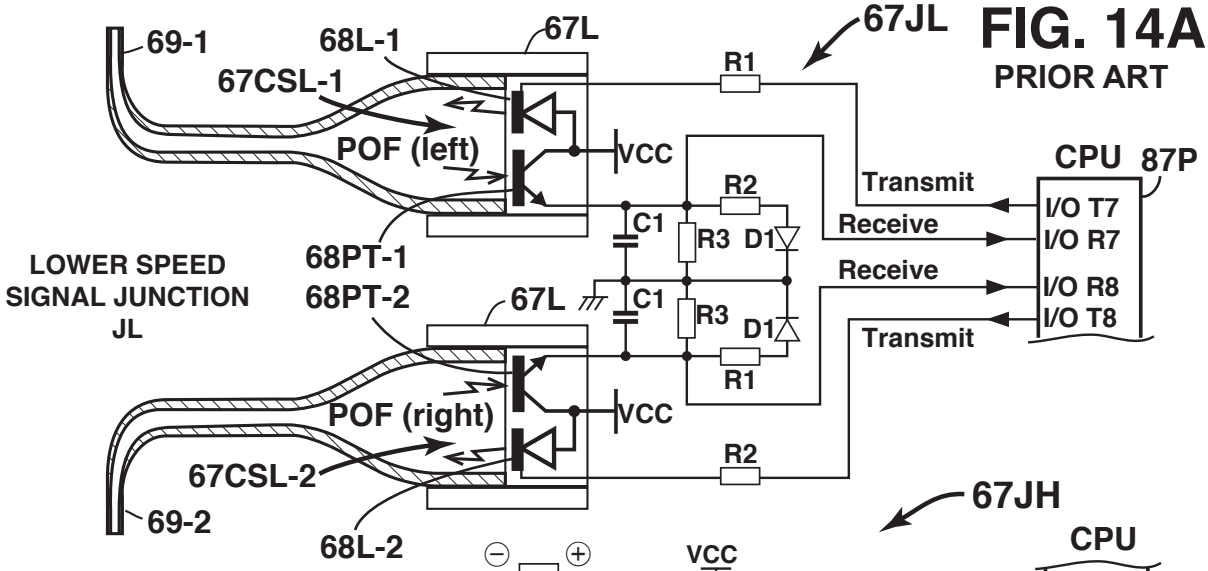



FIG. 14A
PRIOR ART

FIG. 14B

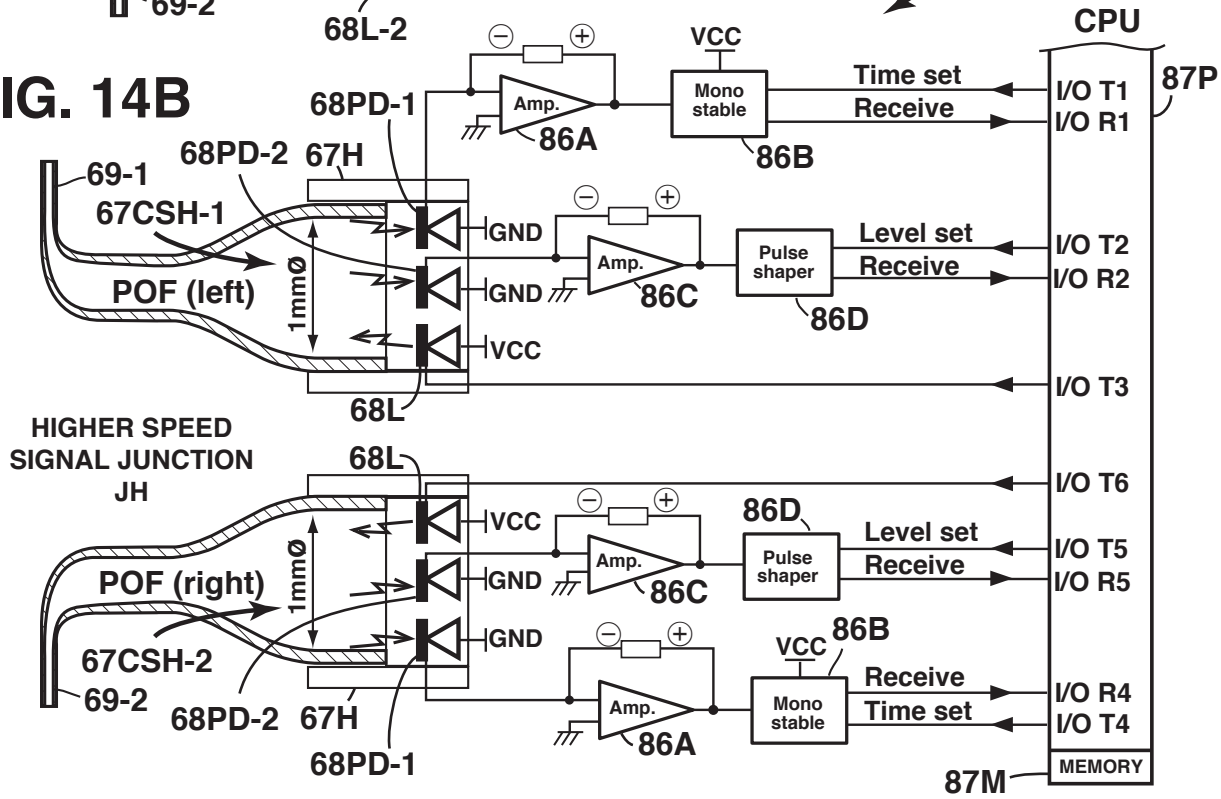
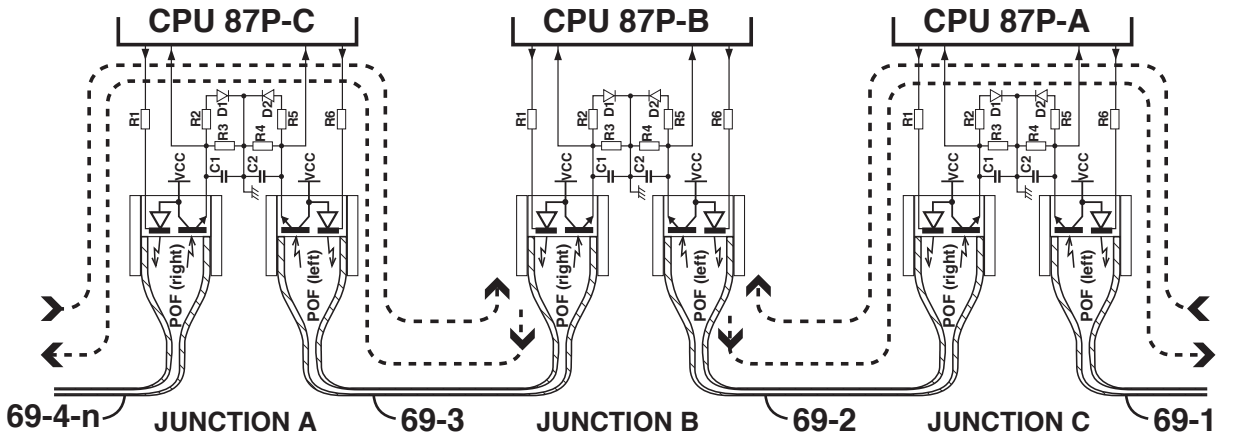
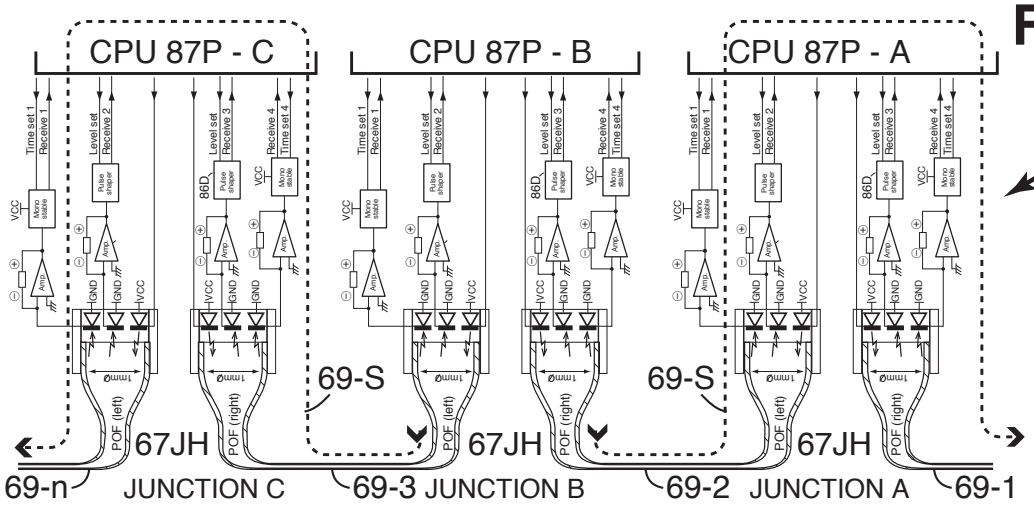



FIG. 14C



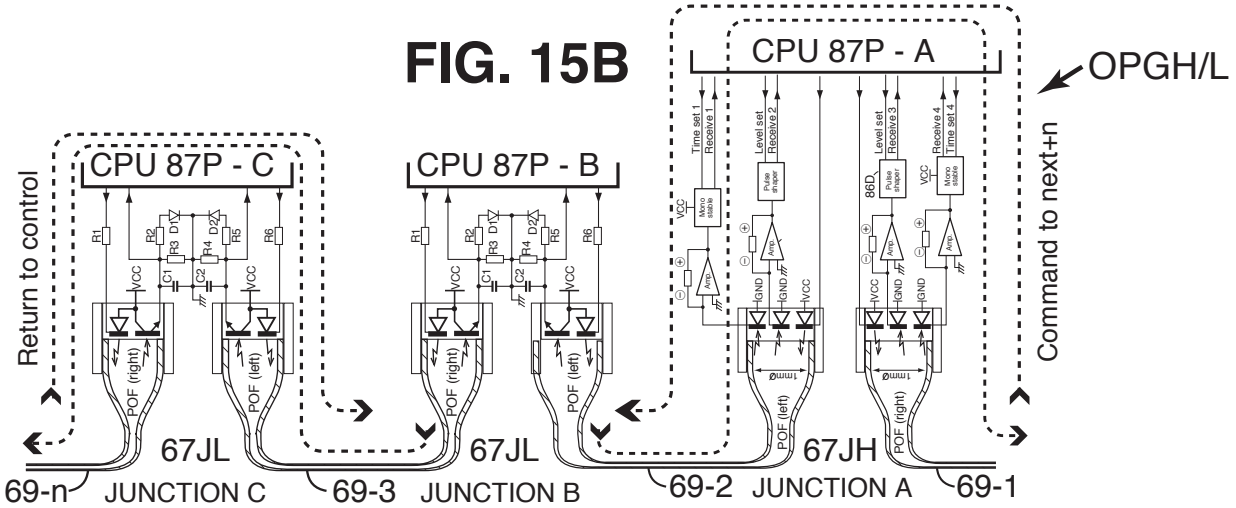

THE CASCADED OPTICAL LINK & GRID L

FIG. 15A




THE CASCADED OPTICAL LINK & GRID H

FIG. 15B




THE CASCADED OPTICAL LINK & GRID H/L

FIG. 15C

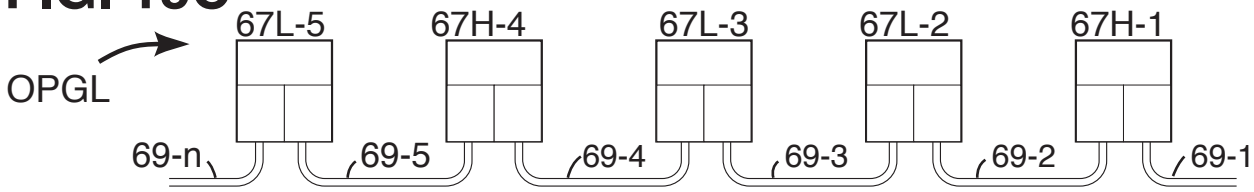



FIG. 15D

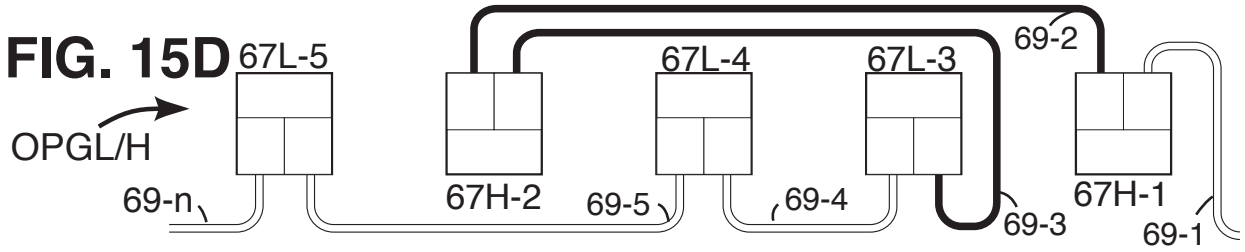
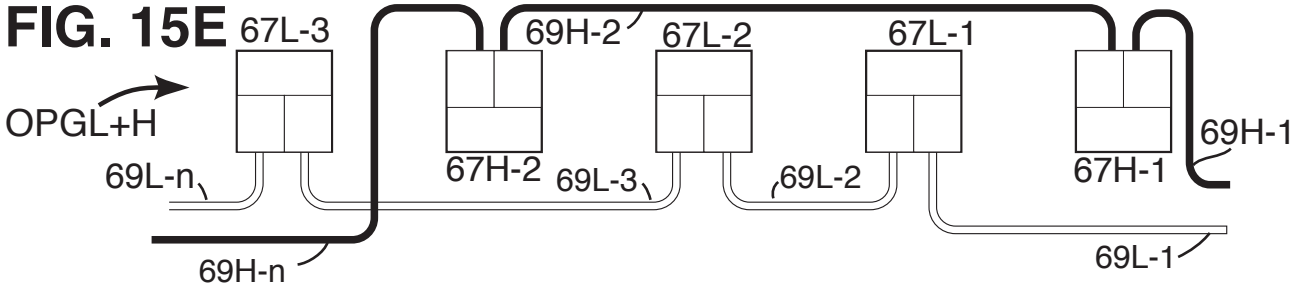



FIG. 15E



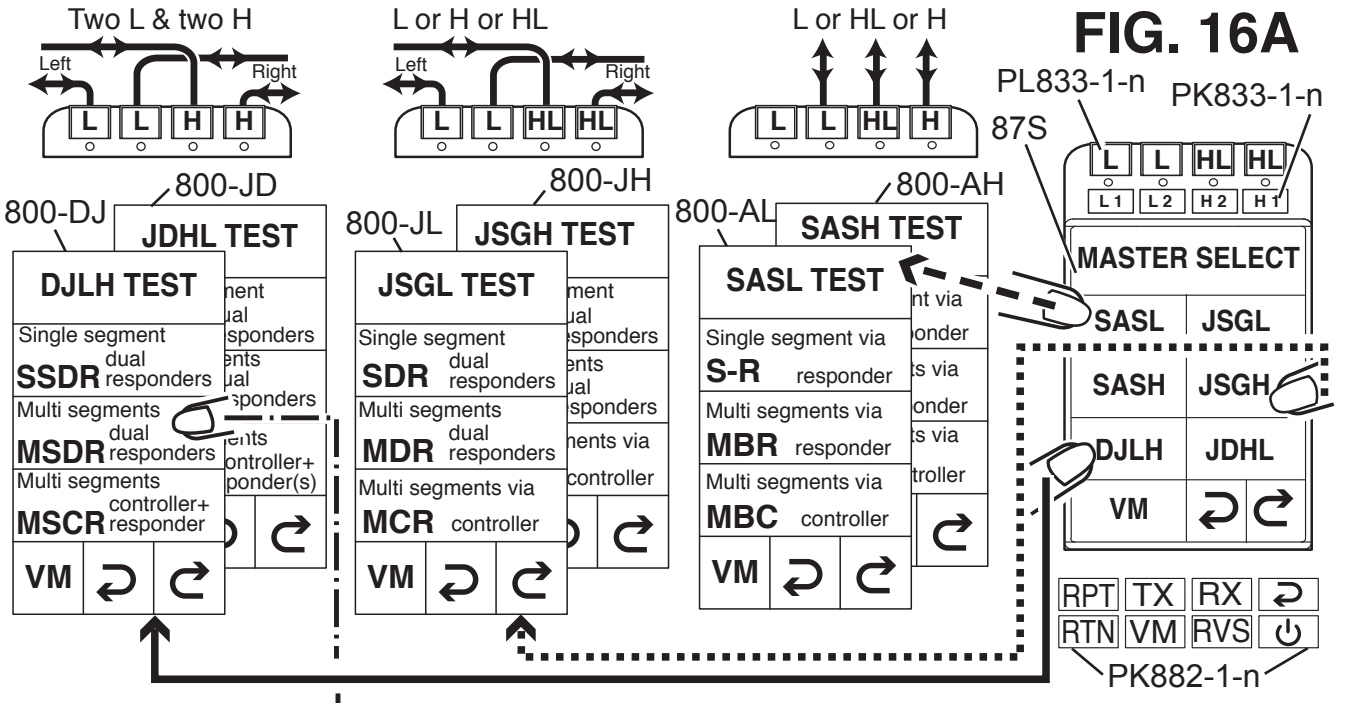



FIG. 16A

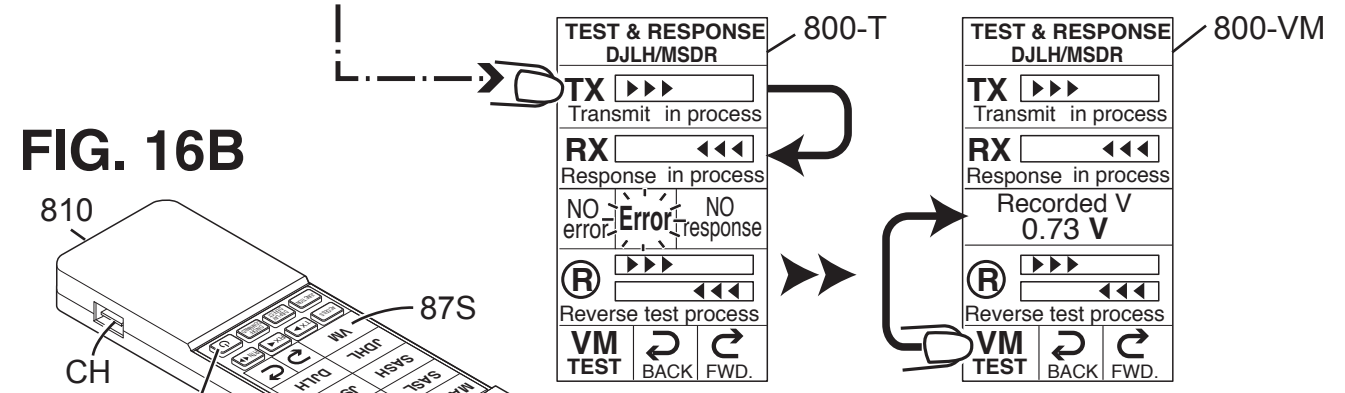
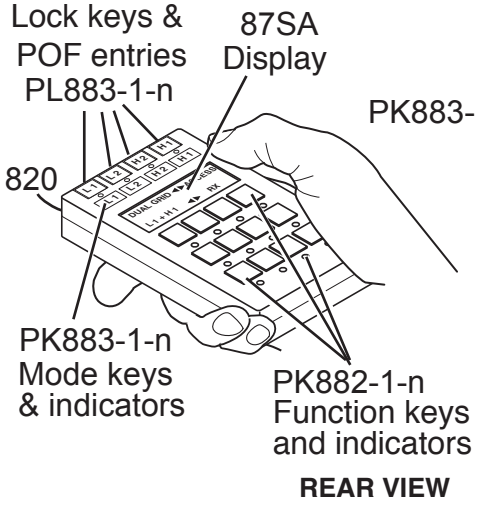
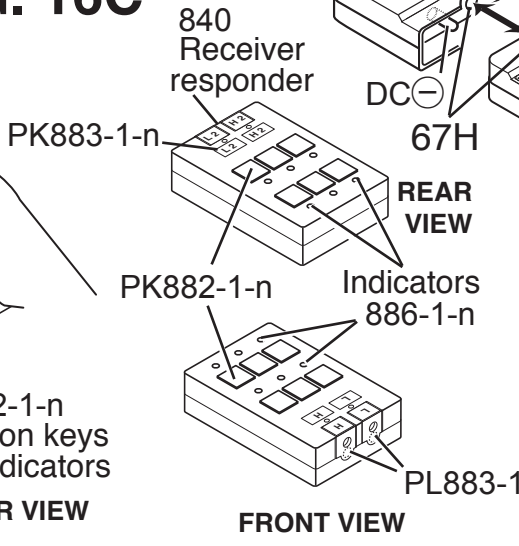



FIG. 16B




FIG. 16C



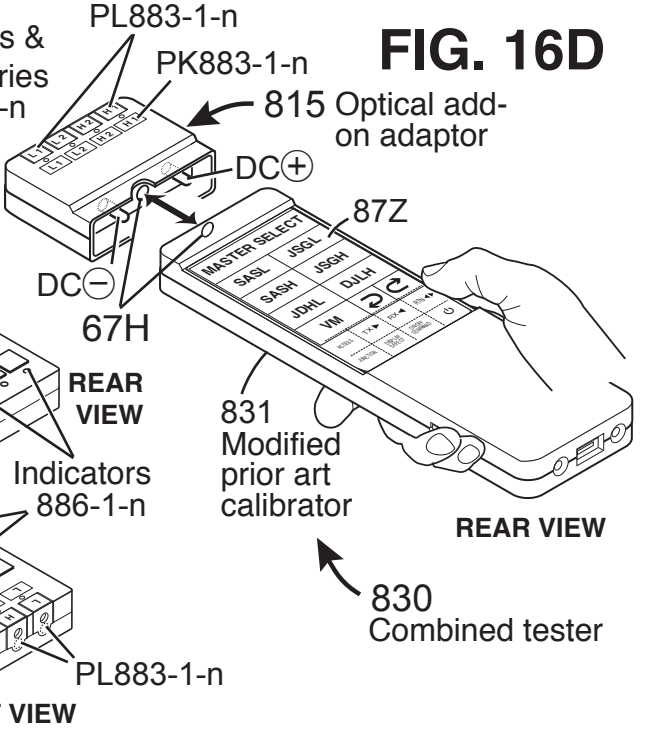




FIG. 16D

FIG. 17A

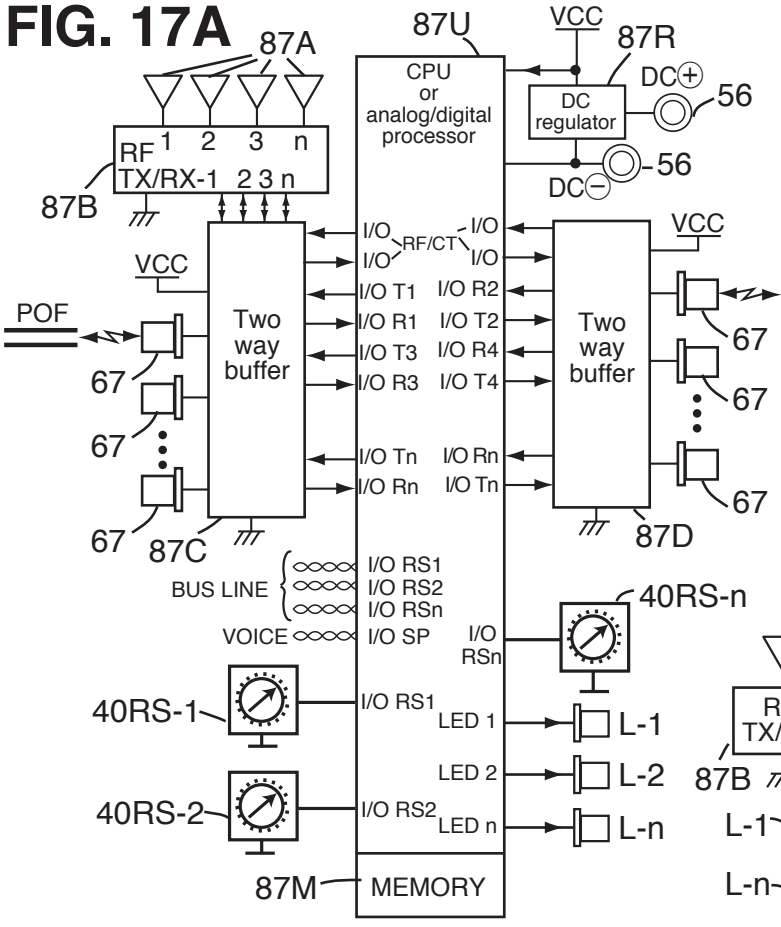



FIG. 17C

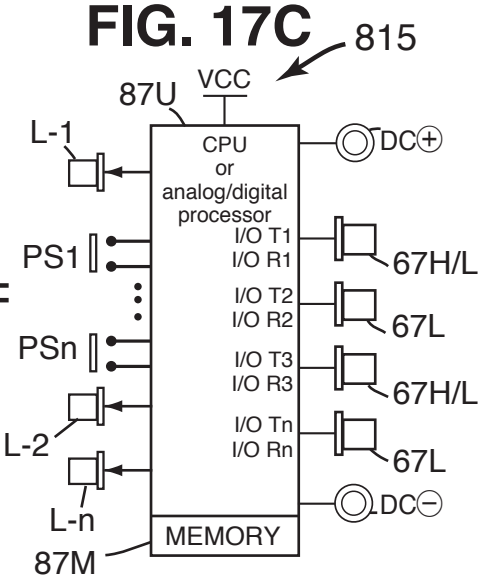



FIG. 17D

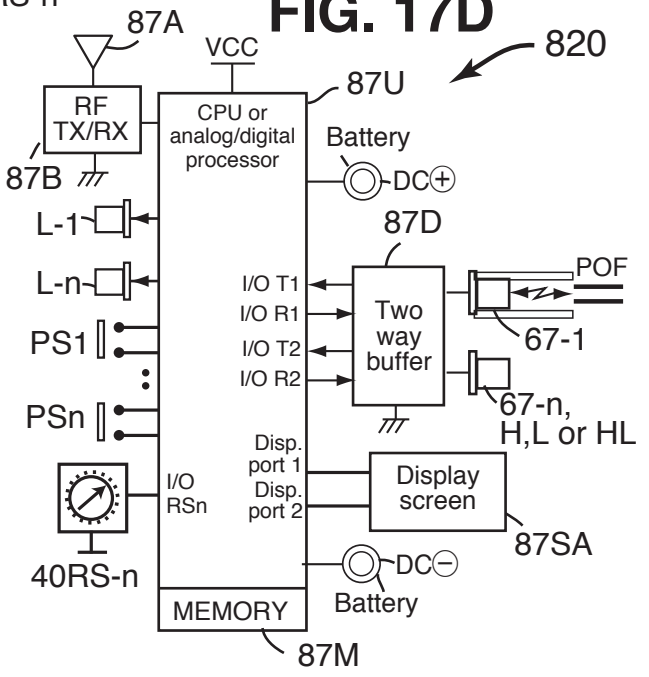



FIG. 17B

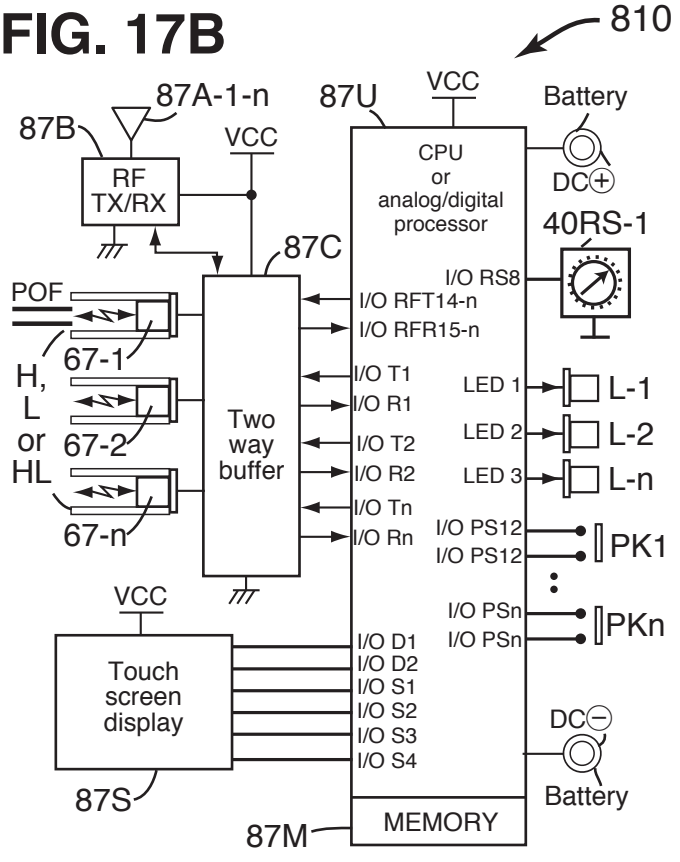
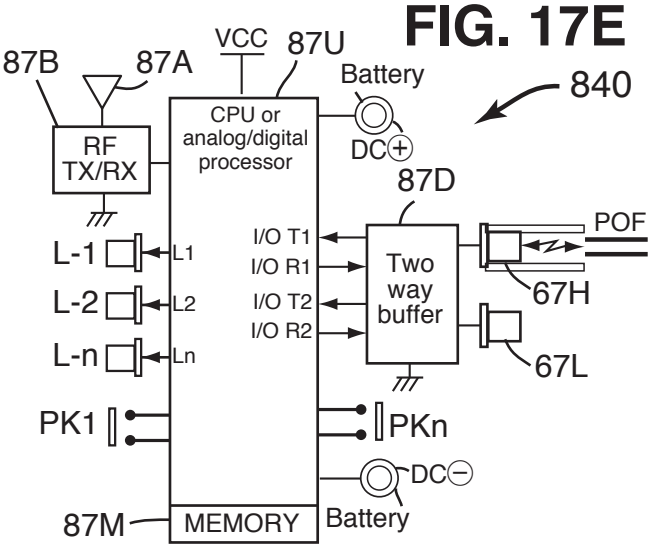
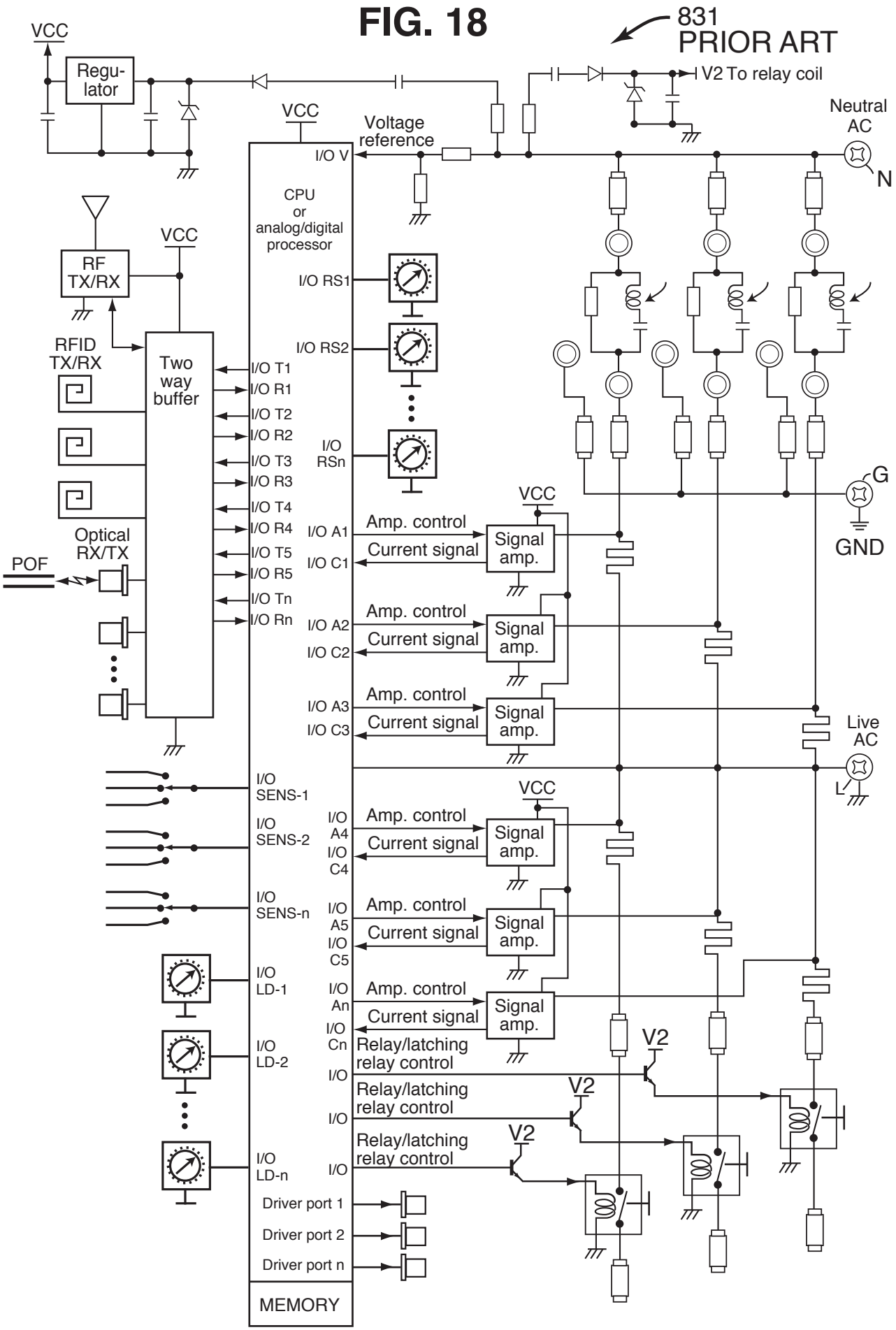


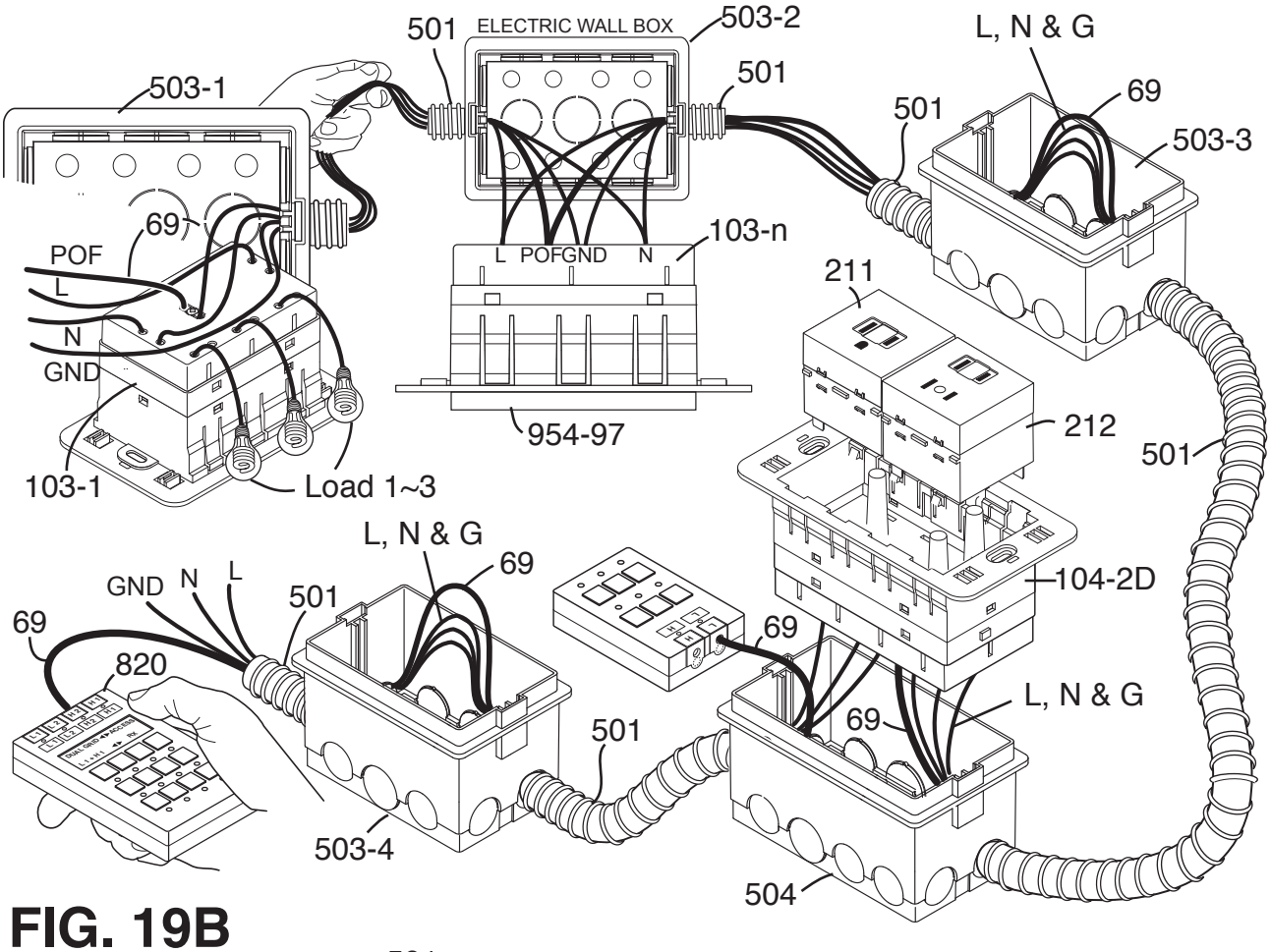

FIG. 17E



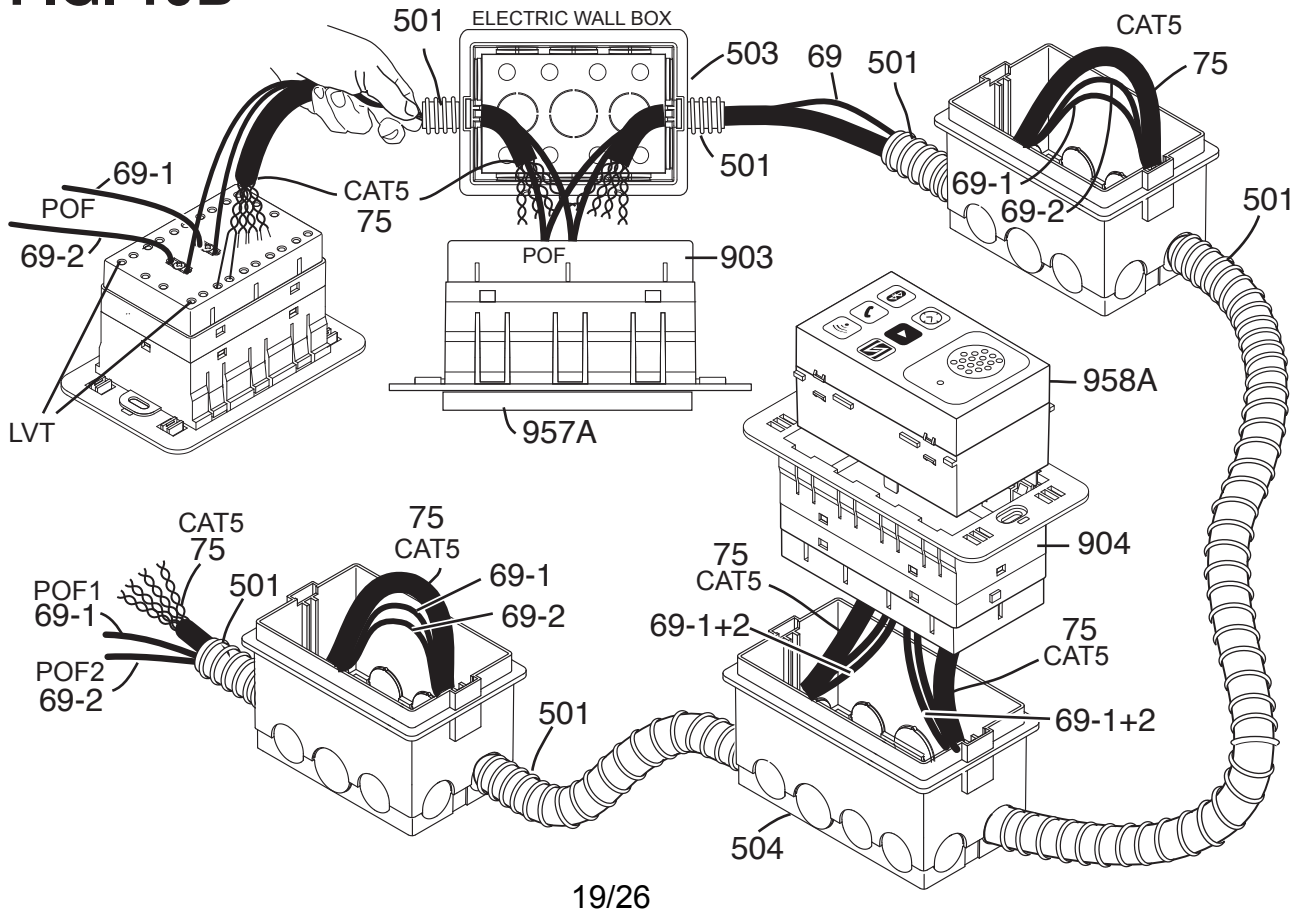
# FIG. 18


831
PRIOR ART
VCC
Regu-
lator
VCC
Voltage
reference
V2 To relay coil
Neutral
AC
N
I/O V
CPU
or
analog/digital
processor
VCC
RF
TX/RX
I/O RS1
I/O RS2
I/O
RSn
RFID
TX/RX
Two
way
buffer
I/O T1
I/O R1
I/O T2
I/O R2
I/O T3
I/O R3
I/O T4
I/O R4
I/O T5
I/O R5
I/O Tn
I/O Rn
Optical
RX/TX
POF
G
GND
VCC
Amp. control
Current signal
I/O A1
I/O C1
Signal
amp.
I/O A2
I/O C2
I/O A3
I/O C3
Live
AC
L
I/O
SENS-1
I/O
SENS-2
I/O
SENS-n
I/O A4
I/O C4
I/O A5
I/O C5
I/O An
I/O Cn
I/O
LD-1
I/O
LD-2
I/O
LD-n
Relay/latching
relay control
V2
Driver port 1
Driver port 2
Driver port n
MEMORY

# FIG. 19A




# FIG. 19B



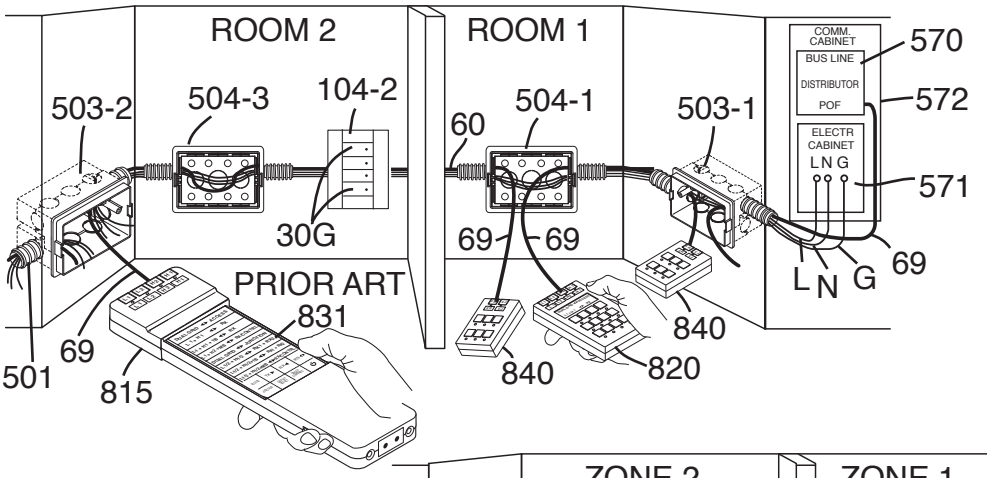



FIG. 20A

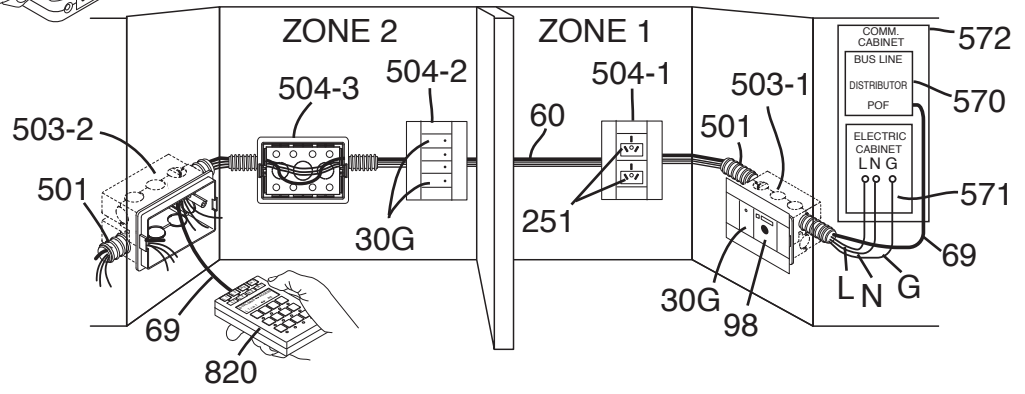



FIG. 20B

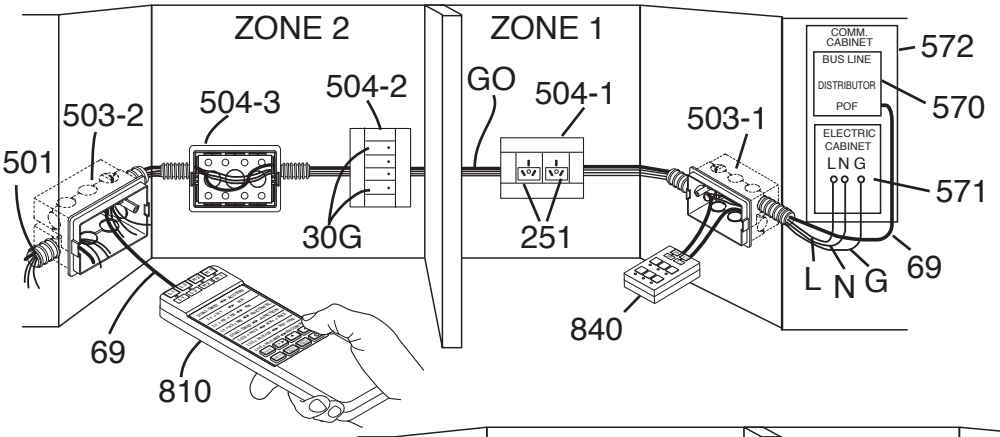



FIG. 20C

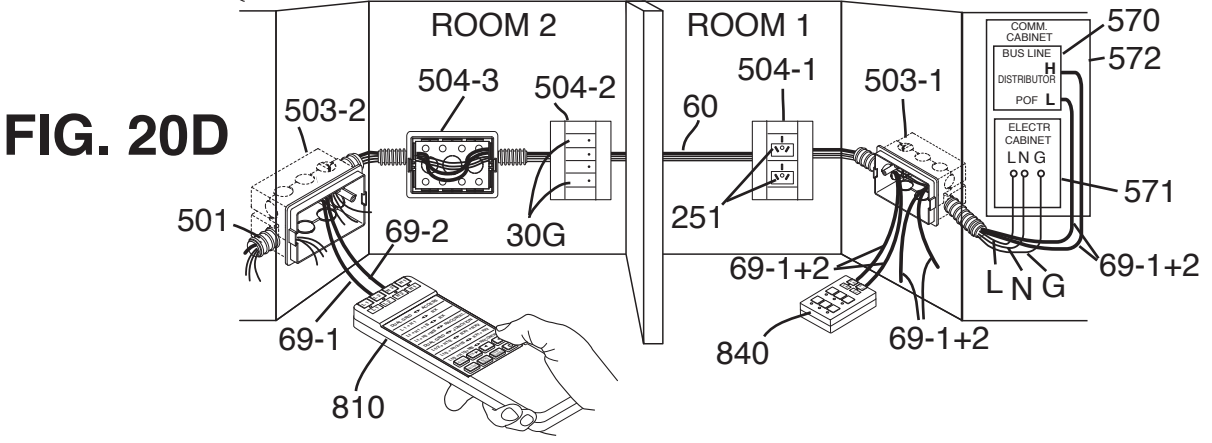
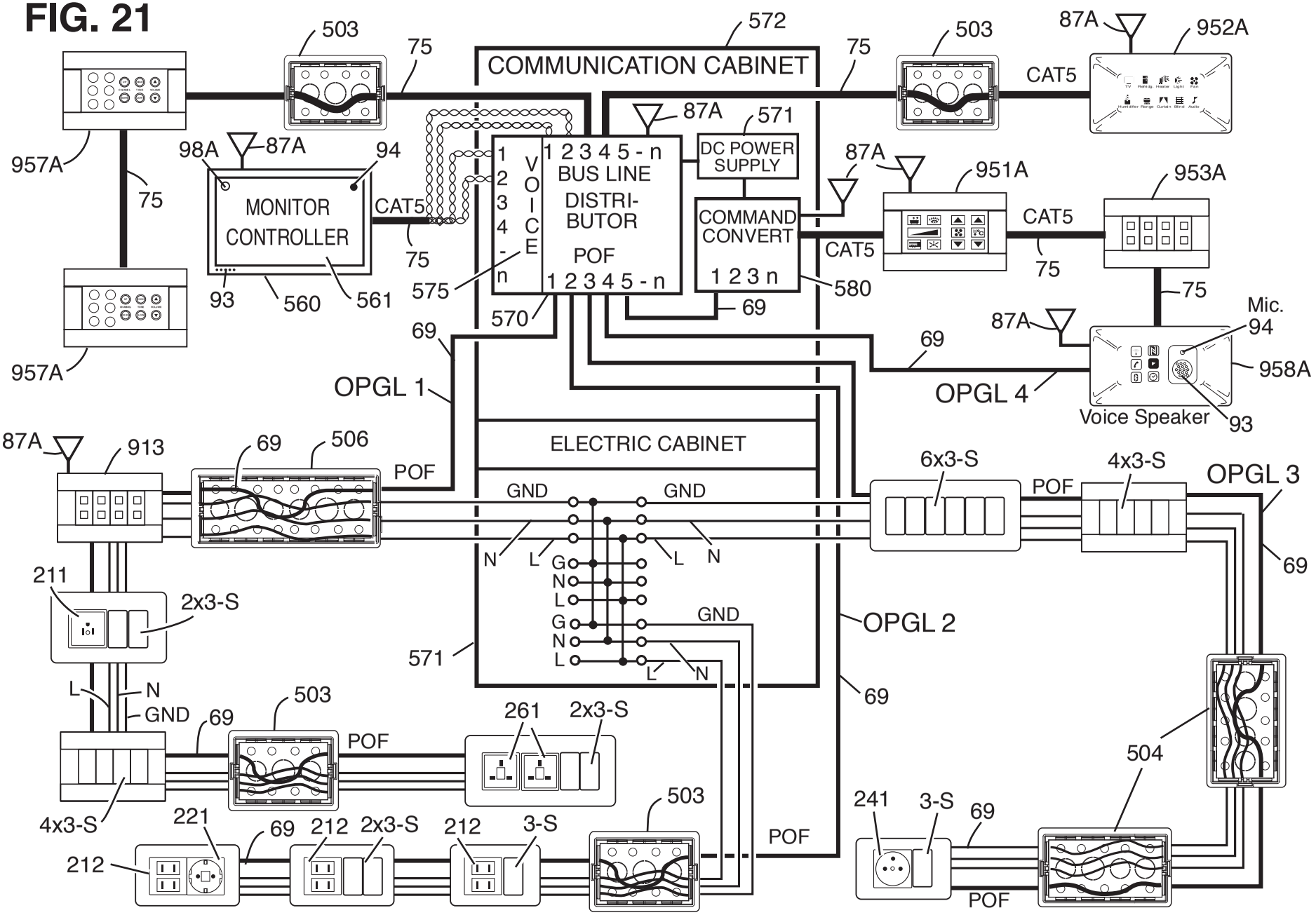



FIG. 20D

# FIG. 21


503
572
COMMUNICATION CABINET
75
503
87A
952A
CAT5
957A
75
98A
87A
94
MONITOR
CONTROLLER
CAT5
75
93
560
561
1 2 3 4 - n
VOICE
1 2 3 4 5 - n
BUS LINE
DISTRI-
BUTOR
POF
1 2 3 4 5 - n
87A
571
DC POWER
SUPPLY
COMMAND
CONVERT
1 2 3 n
580
575
570
69
87A
951A
953A
CAT5
CAT5
75
75
957A
69
69
OPGL 1
OPGL 4
87A
Mic.
94
958A
Voice Speaker
93
87A
913
69
506
POF
ELECTRIC CABINET
6x3-S
POF
4x3-S
OPGL 3
GND
GND
N
L
G
N
L
L
N
69
211
2x3-S
571
GND
OPGL 2
L
N
GND
69
503
261
2x3-S
POF
504
4x3-S
221
69
212
2x3-S
212
3-S
503
POF
241
3-S
69
212
POF

# FIG. 22

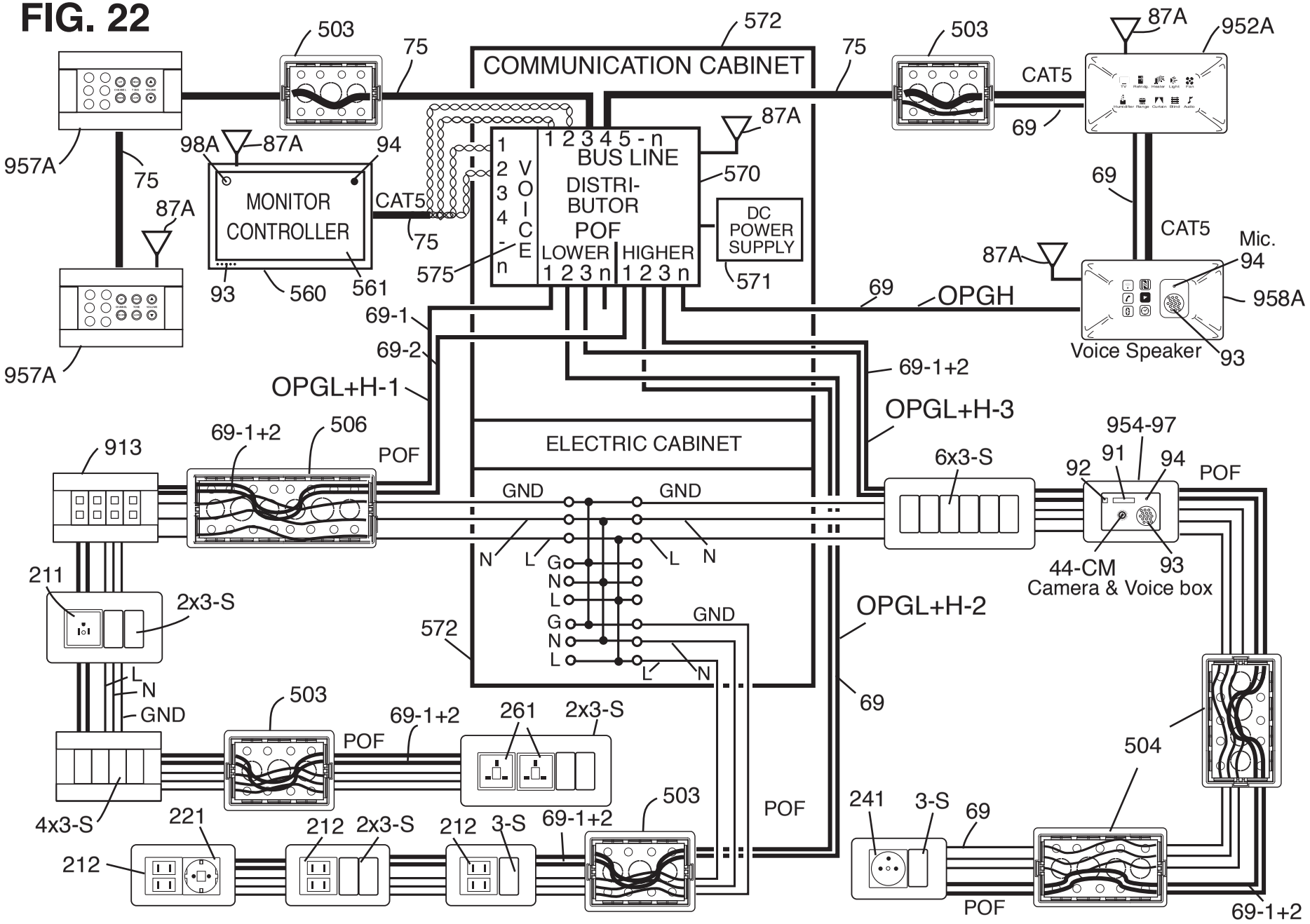

503
572
75
COMMUNICATION CABINET
75
503
87A
952A
CAT5
69
957A
75
98A
87A
94
MONITOR CONTROLLER
CAT5
75
93
560
561
1 2 3 4 - n
VOICE
1 2 3 4 5 - n
BUS LINE
DISTRI-BUTOR
POF
LOWER 1 2 3 n
HIGHER 1 2 3 n
87A
570
DC POWER SUPPLY
571
575
69
CAT5
87A
Mic.
94
958A
OPGH
Voice Speaker
93
957A
69-1
69-2
OPGL+H-1
69-1+2
OPGL+H-3
913
69-1+2
506
POF
ELECTRIC CABINET
6x3-S
954-97
91
92
94
POF
GND
GND
N
L
G
N
L
L
N
44-CM
Camera & Voice box
93
211
2x3-S
572
GND
OPGL+H-2
L
N
GND
503
69-1+2
261
2x3-S
POF
69
504
4x3-S
221
212
2x3-S
212
3-S
69-1+2
503
POF
241
3-S
69
212
POF
69-1+2

FIG. 23A

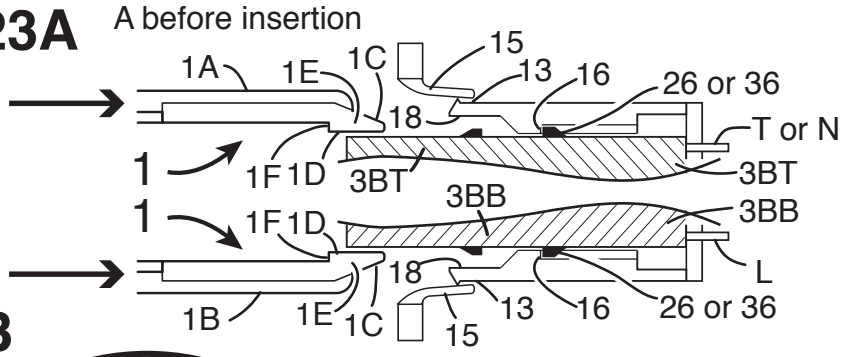



FIG. 23B

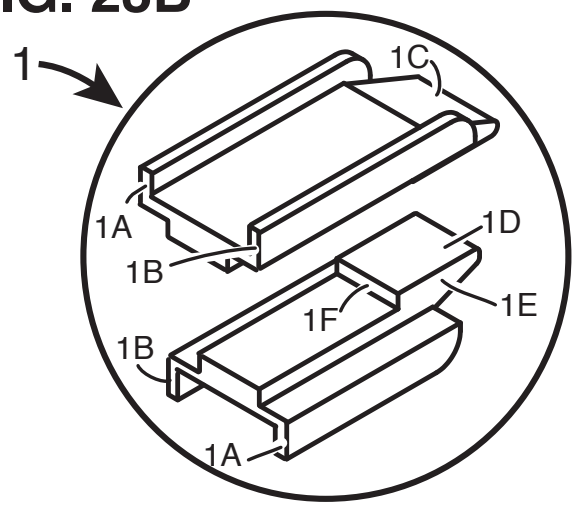
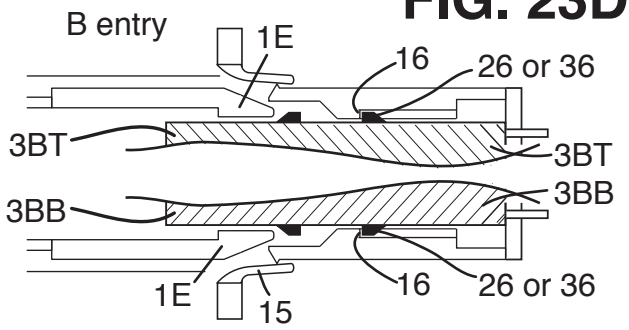



FIG. 23D



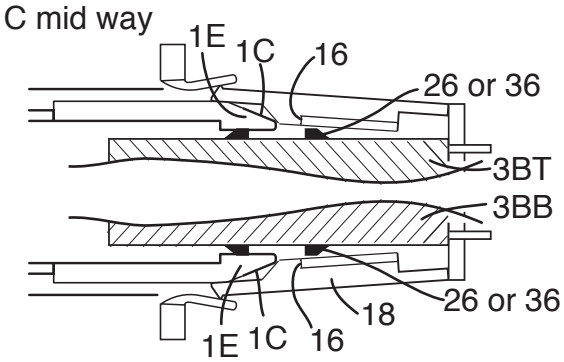
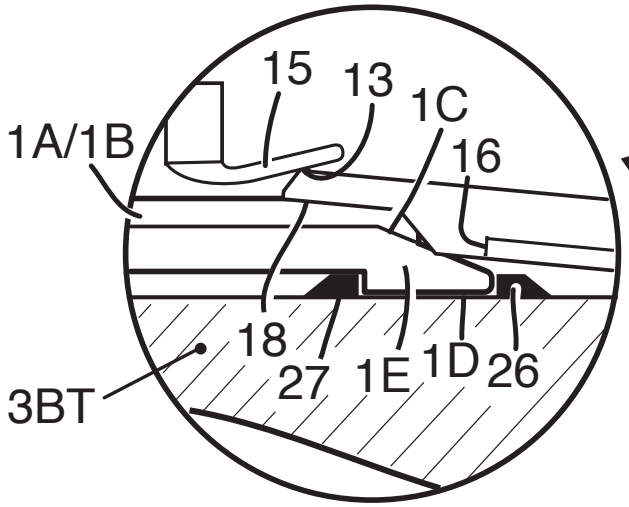




FIG. 23C



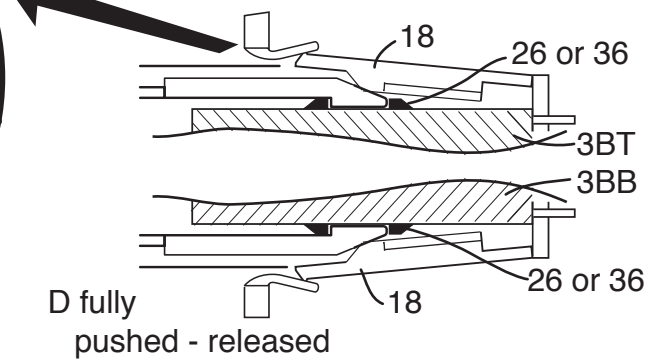
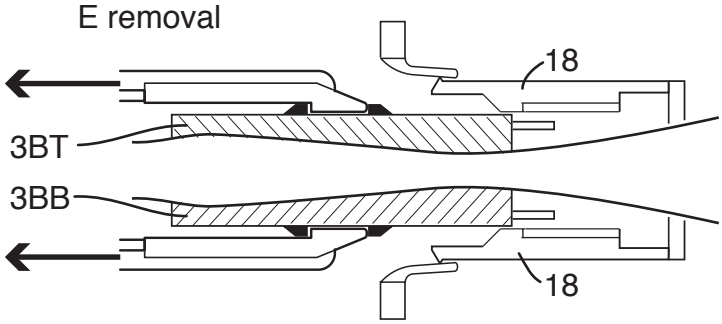




FIG. 23E



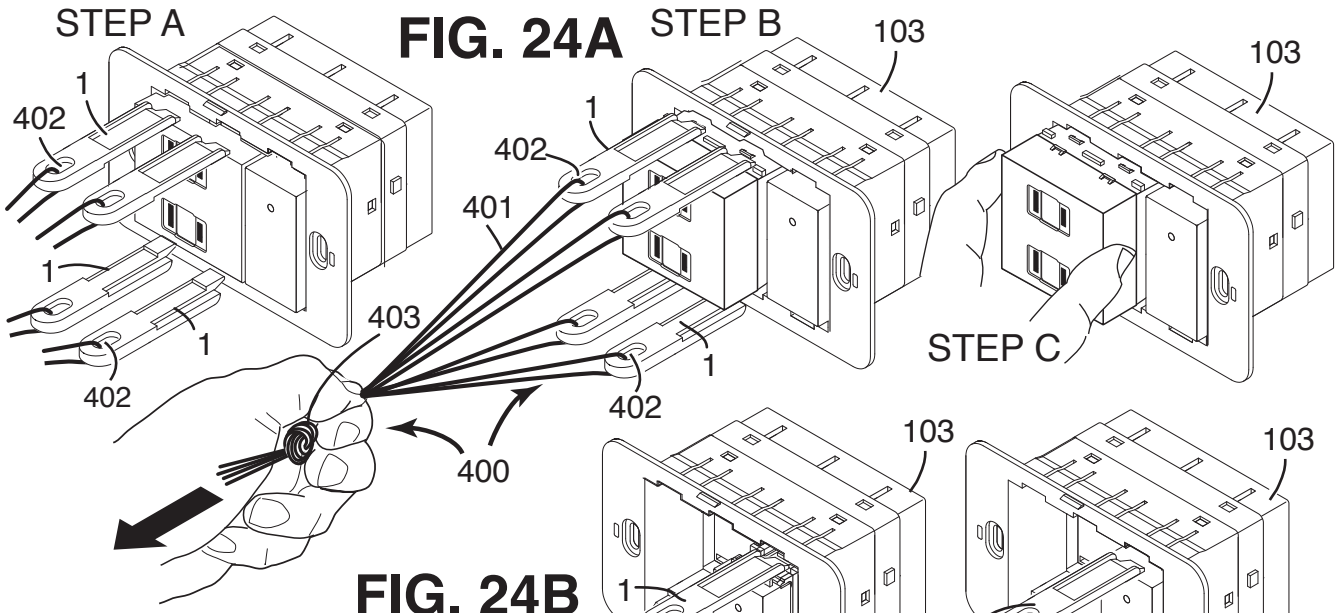



FIG. 24A




FIG. 24B

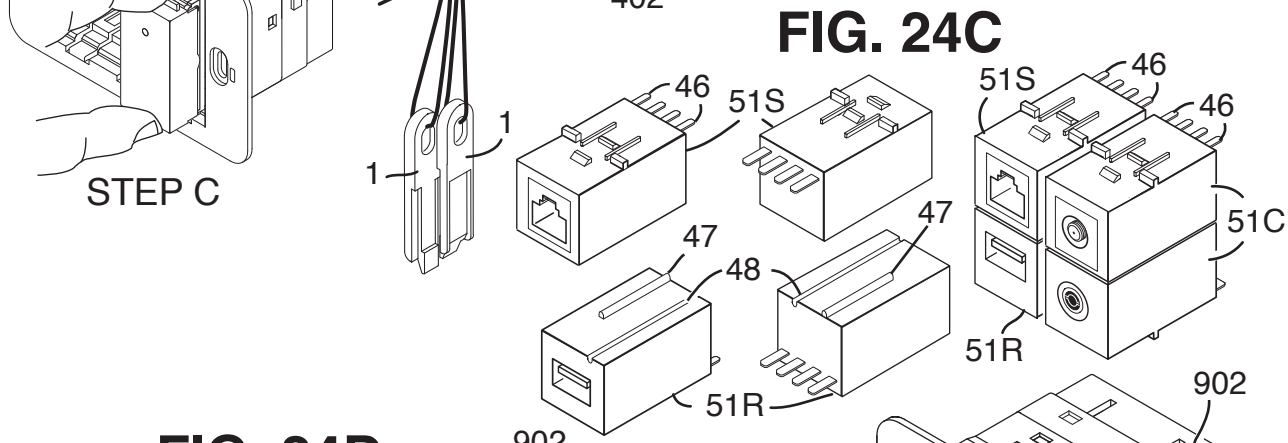



FIG. 24C

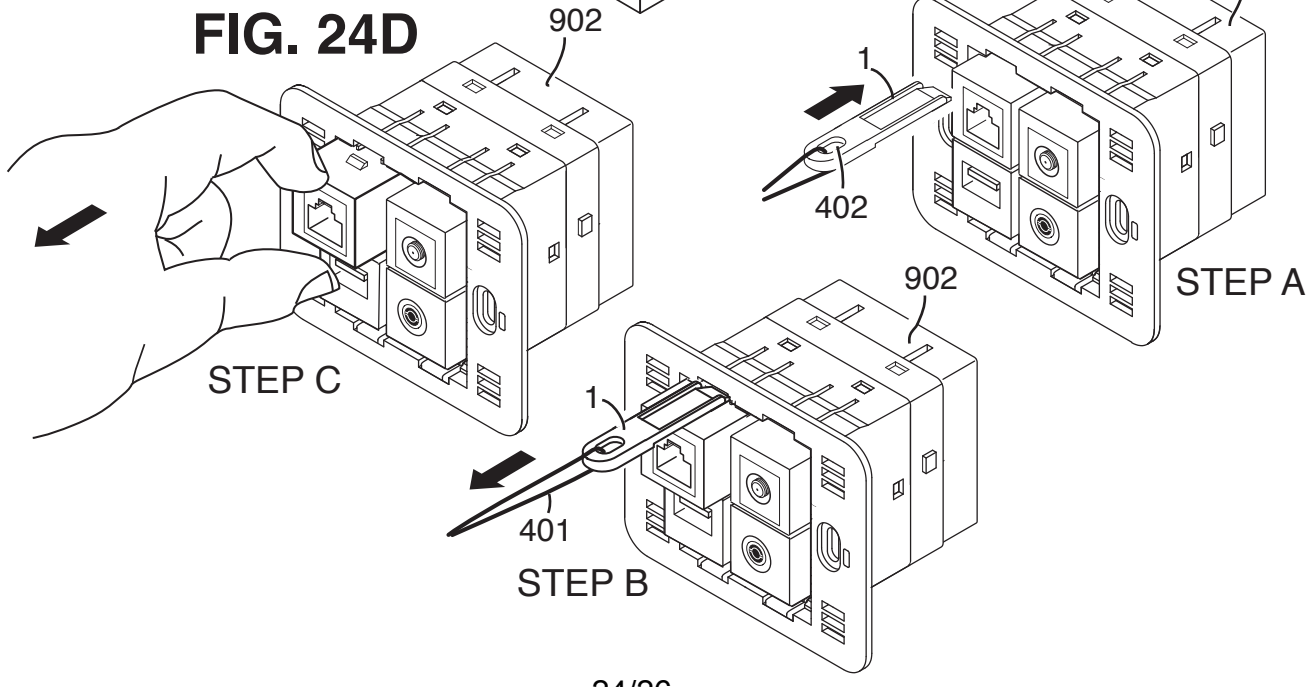



FIG. 24D

FIG. 25A

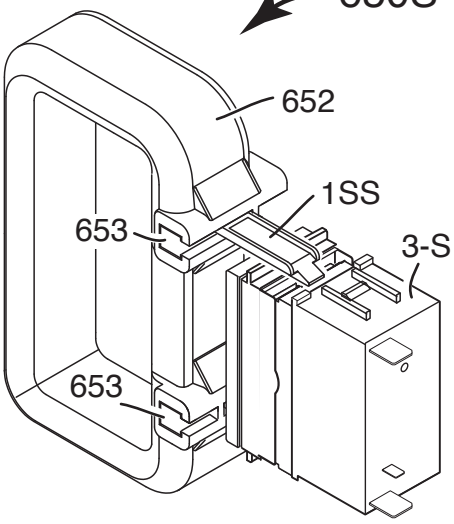



FIG. 25B

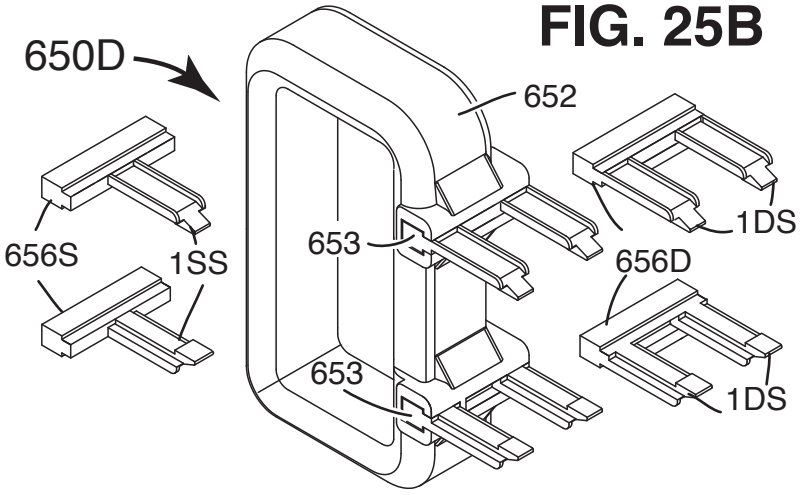



FIG. 25C

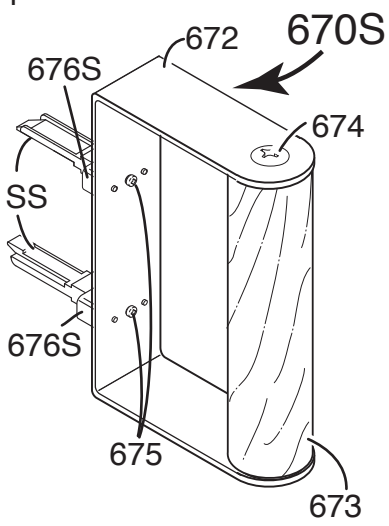



FIG. 25D

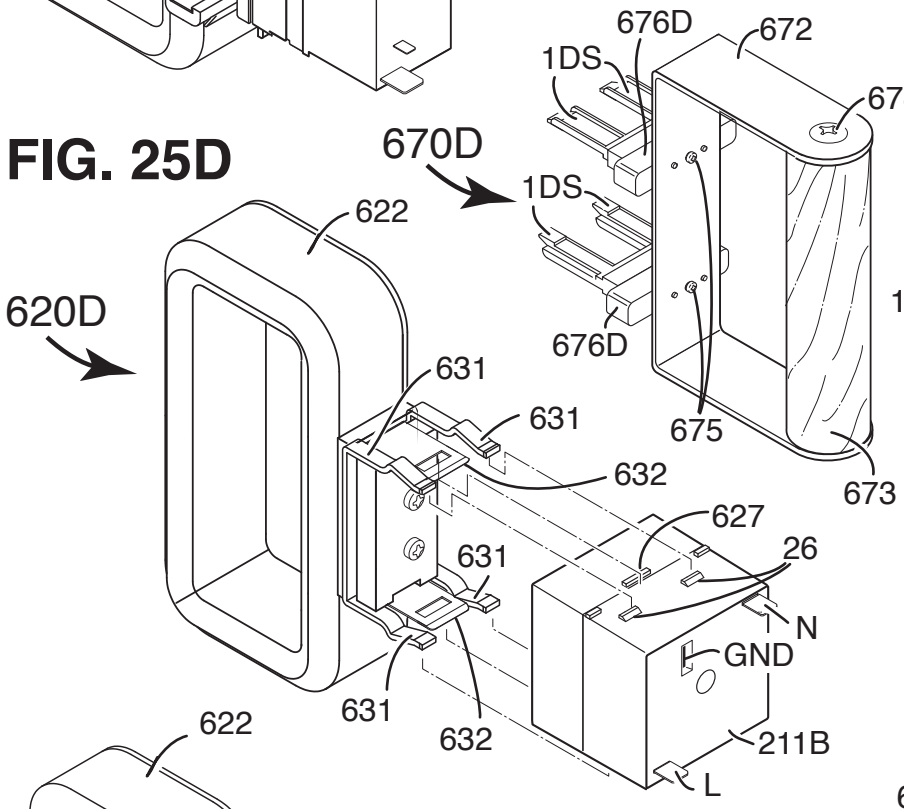



FIG. 25E

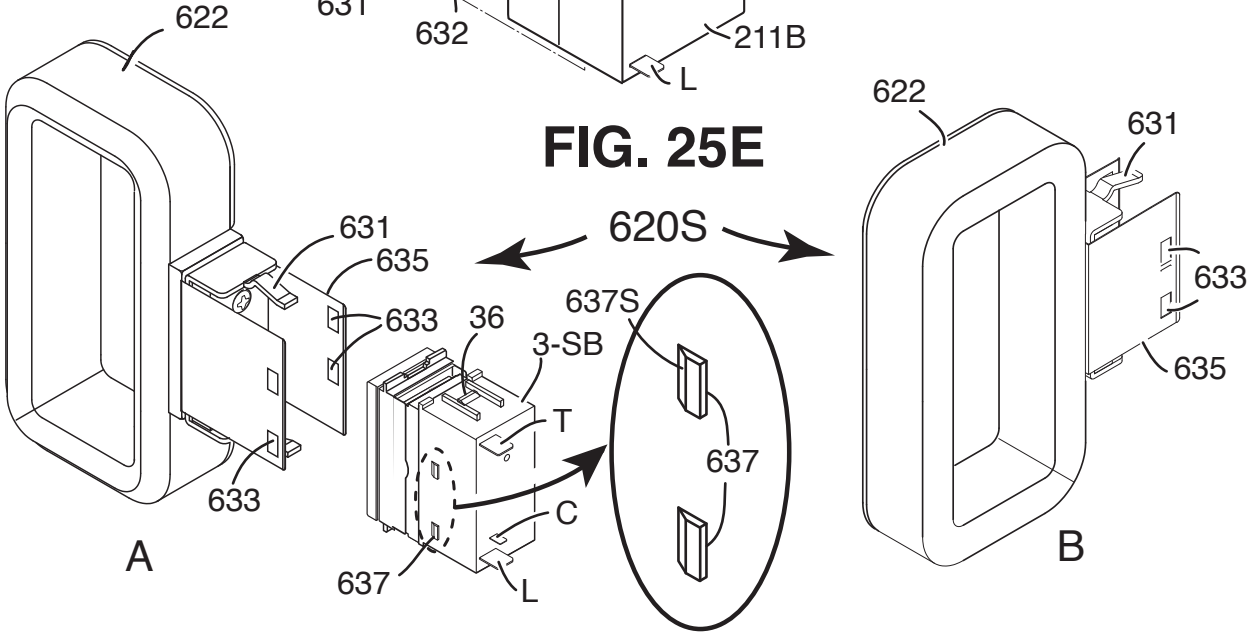


FIG. 26A

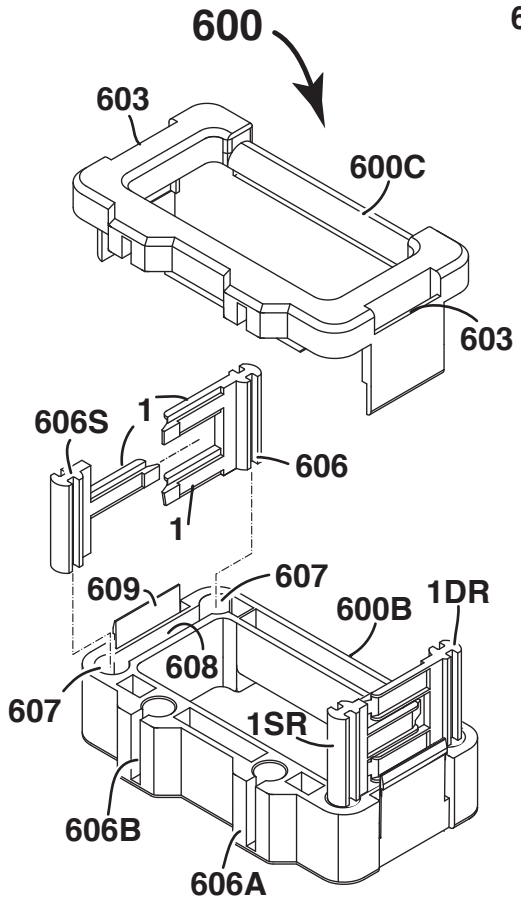



FIG. 26B

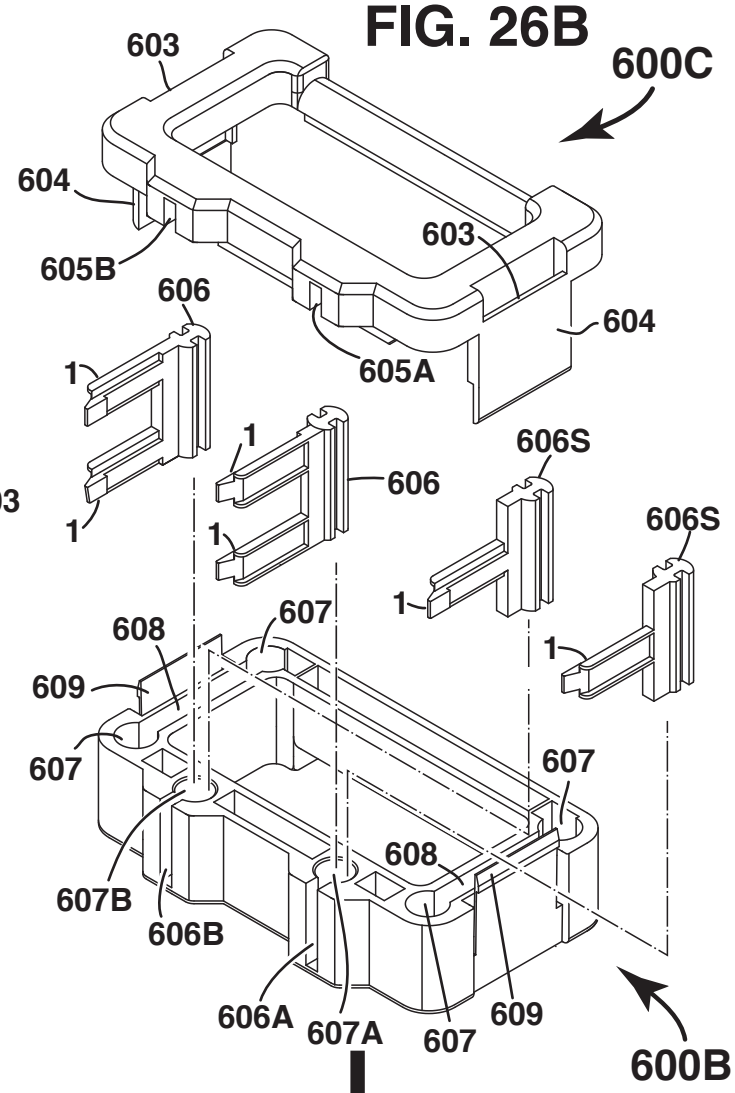
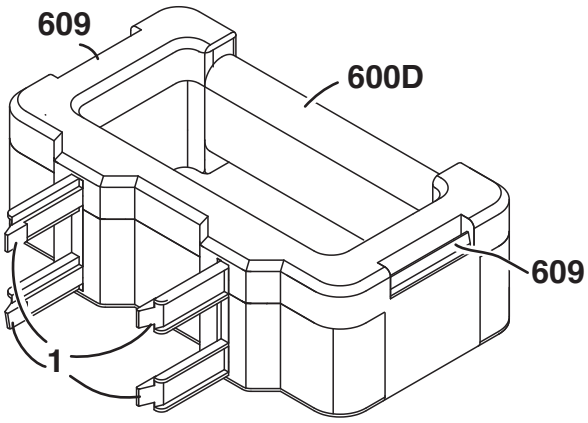
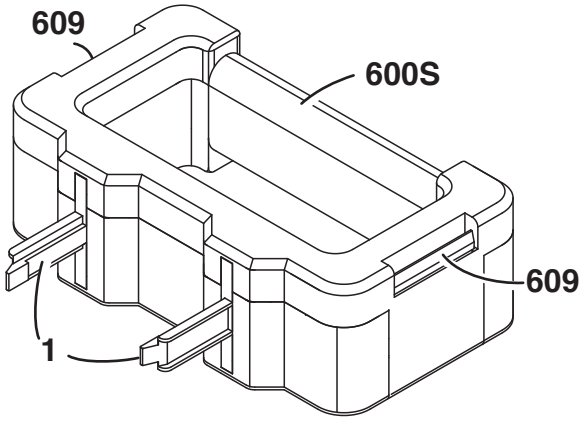



FIG. 26C




Release Tool (dual gang)




Release Tool (single gang)