Fig.1

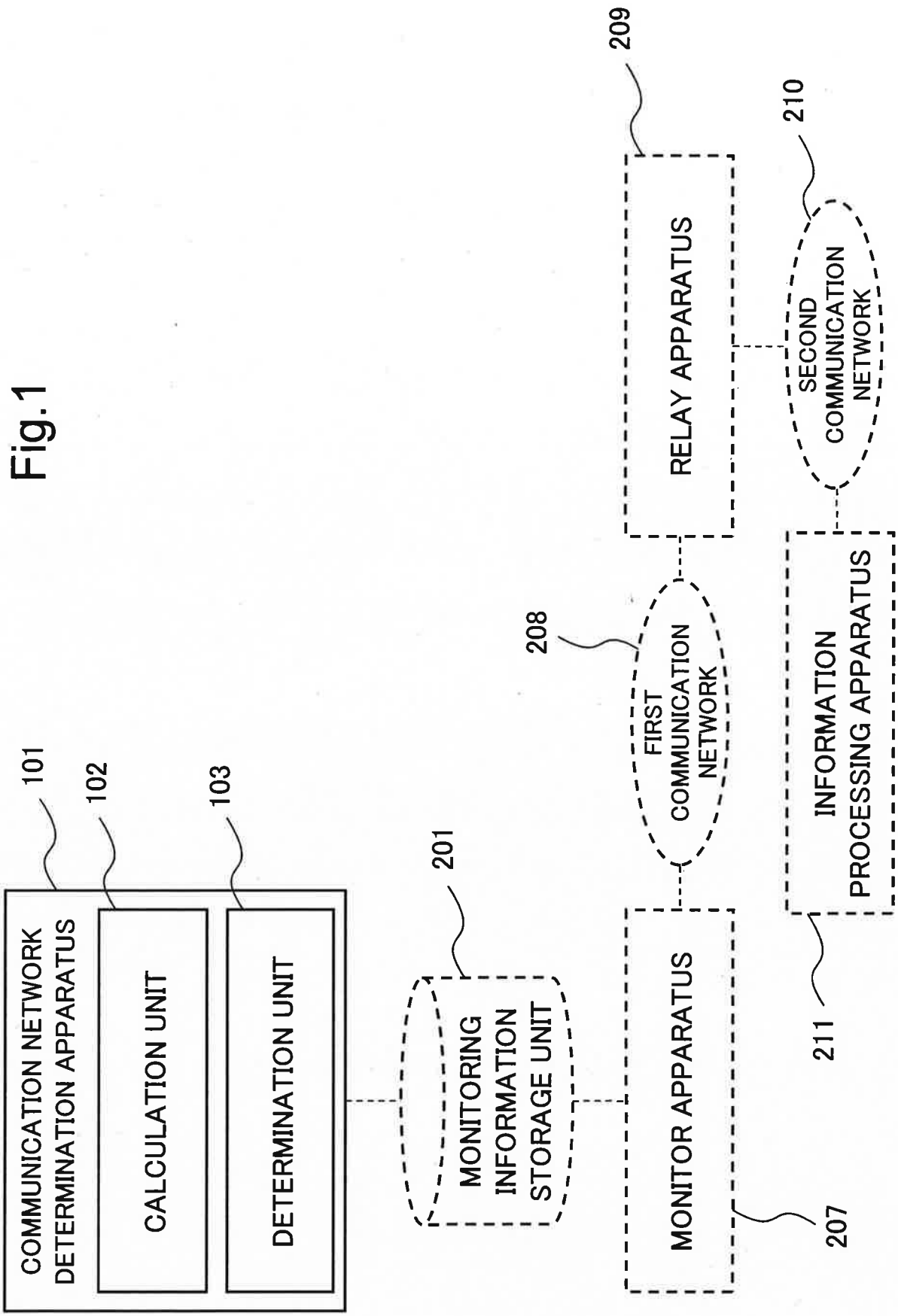

COMMUNICATION NETWORK DETERMINATION APPARATUS
101
CALCULATION UNIT
102
DETERMINATION UNIT
103
MONITORING INFORMATION STORAGE UNIT
201
MONITOR APPARATUS
207
FIRST COMMUNICATION NETWORK
208
RELAY APPARATUS
209
SECOND COMMUNICATION NETWORK
210
INFORMATION PROCESSING APPARATUS
211

Fig.2

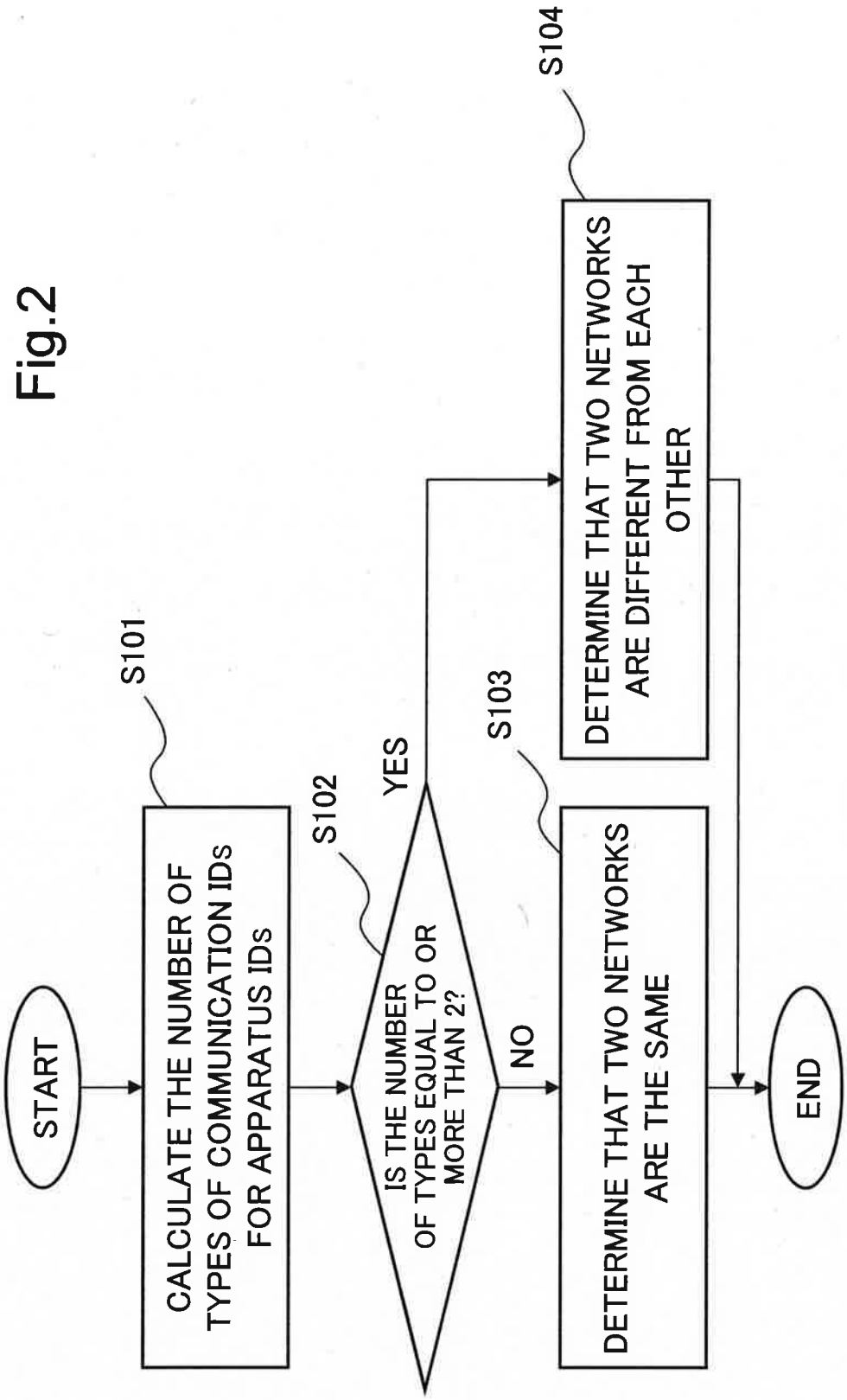

START
S101
CALCULATE THE NUMBER OF TYPES OF COMMUNICATION IDs FOR APPARATUS IDs
S102
IS THE NUMBER OF TYPES EQUAL TO OR MORE THAN 2?
YES
NO
S103
DETERMINE THAT TWO NETWORKS ARE THE SAME
S104
DETERMINE THAT TWO NETWORKS ARE DIFFERENT FROM EACH OTHER
END

Fig.3

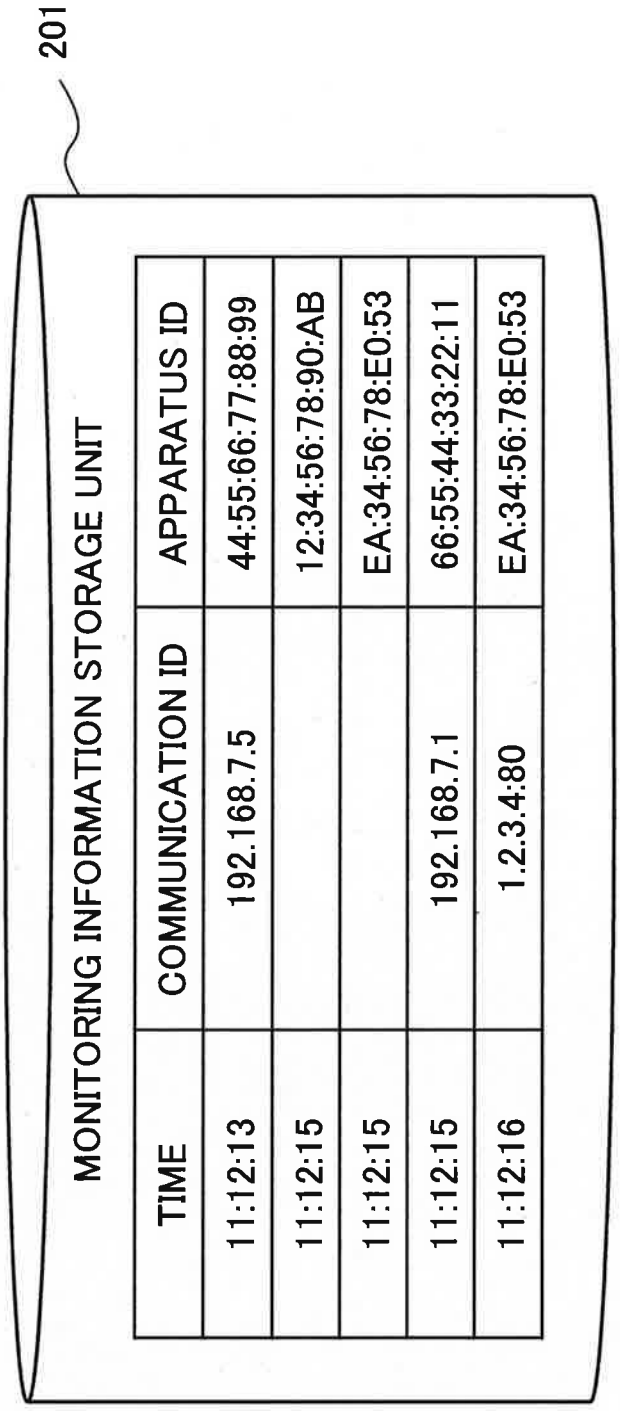

201
MONITORING INFORMATION STORAGE UNIT
TIME
COMMUNICATION ID
APPARATUS ID
11:12:13
192.168.7.5
44:55:66:77:88:99
11:12:15
12:34:56:78:90:AB
11:12:15
EA:34:56:78:E0:53
11:12:15
192.168.7.1
66:55:44:33:22:11
11:12:16
1.2.3.4:80
EA:34:56:78:E0:53

Fig.4

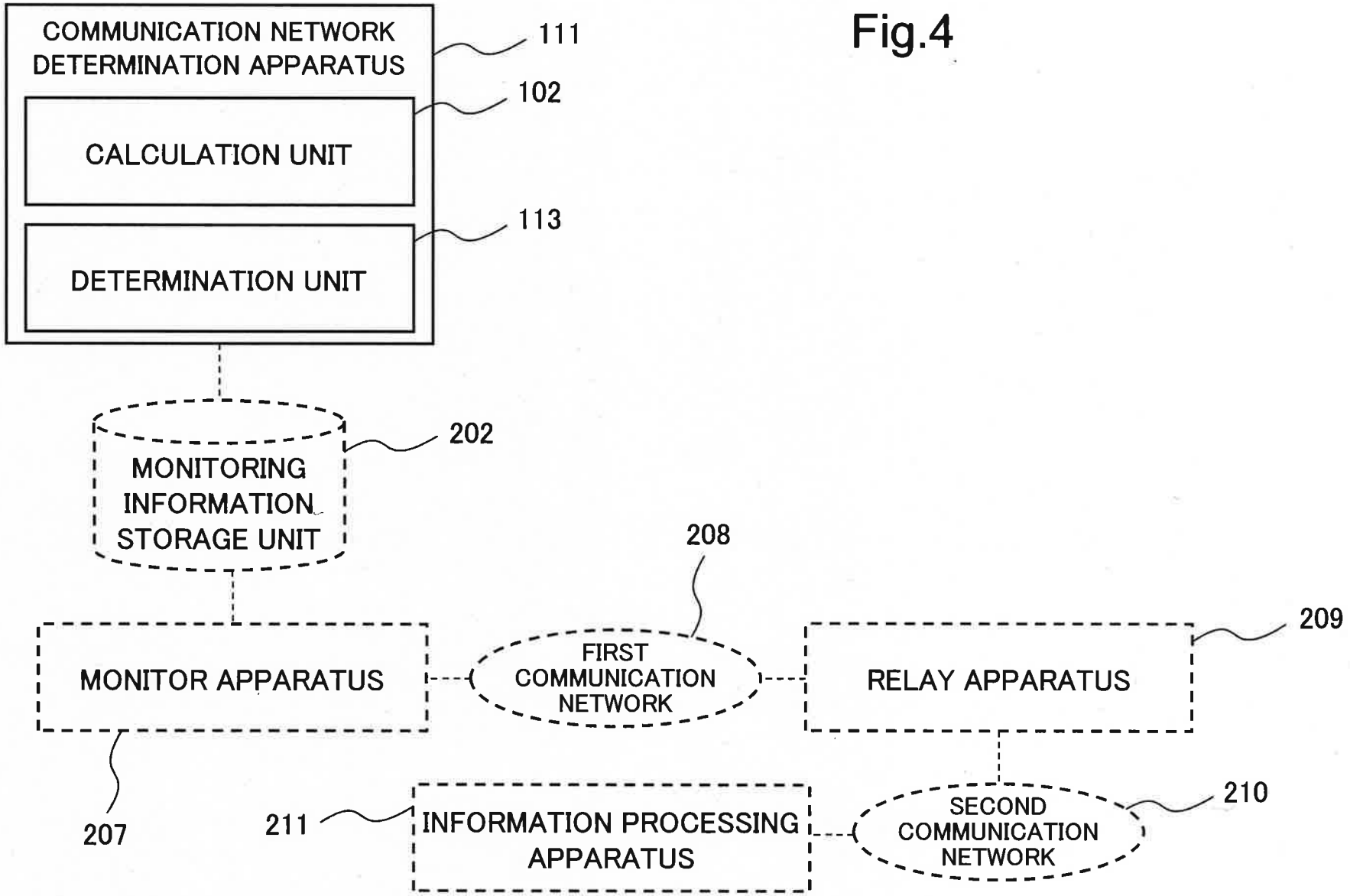

COMMUNICATION NETWORK DETERMINATION APPARATUS
111
102
CALCULATION UNIT
113
DETERMINATION UNIT
202
MONITORING INFORMATION STORAGE UNIT
208
209
MONITOR APPARATUS
FIRST COMMUNICATION NETWORK
RELAY APPARATUS
207
211
INFORMATION PROCESSING APPARATUS
210
SECOND COMMUNICATION NETWORK

Fig.5

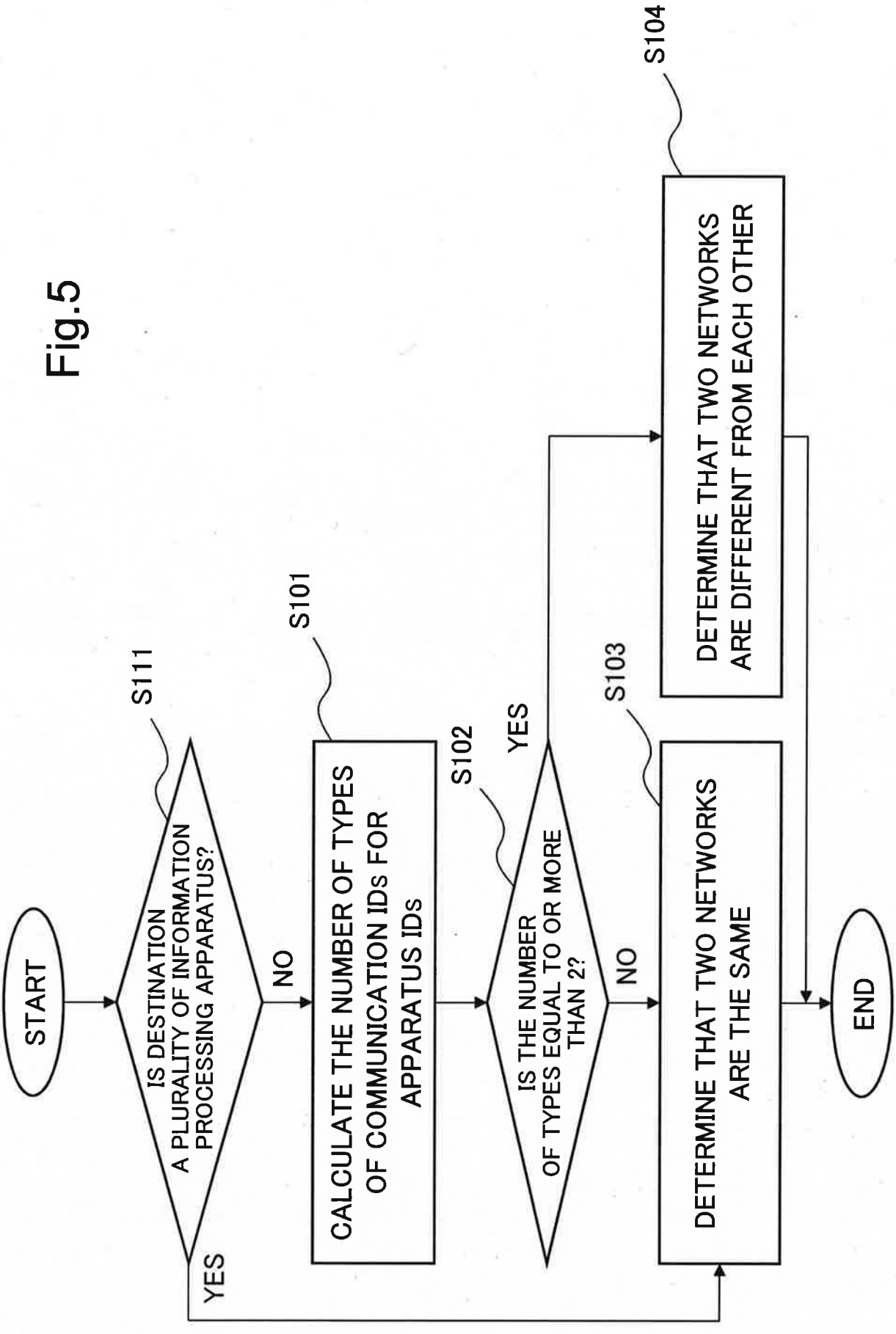

START
S111
IS DESTINATION A PLURALITY OF INFORMATION PROCESSING APPARATUS?
YES
NO
S101
CALCULATE THE NUMBER OF TYPES OF COMMUNICATION IDs FOR APPARATUS IDs
S102
IS THE NUMBER OF TYPES EQUAL TO OR MORE THAN 2?
YES
NO
S103
DETERMINE THAT TWO NETWORKS ARE THE SAME
S104
DETERMINE THAT TWO NETWORKS ARE DIFFERENT FROM EACH OTHER
END

Fig.6

202

MONITORING INFORMATION STORAGE UNIT

TIME	COMMUNICATION ID OF TRANSMISSION SOURCE	APPARATUS ID OF TRANSMISSION SOURCE	COMMUNICATION ID OF DESTINATION	APPARATUS ID OF DESTINATION	CONTENT INFORMATION
11:12:13	192.168.7.5:137	44:55:66:77:88:99	192.168.7.255	FF:FF:FF:FF:FF:FF	NetBIOS NameService
11:12:15		12:34:56:78:90:AB		FF:FF:FF:FF:FF:FF	ARP Which has 192.168.7.254
11:12:15		EA:34:56:78:E0:53		12:34:56:78:90:AB	ARP 192.168.7.254 is EA:34:56:78:E0:53
11:12:15	192.168.7.1:8546	66:55:44:33:22:11	1.2.3.4:80	EA:34:56:78:E0:5	GET / HTTP/1.1
11:12:16	1.2.3.4:80	EA:34:56:78:E0:53	192.168.7.1:8564	66:55:44:33:22:11	OK 200 <HTML><BODY>

Fig.7

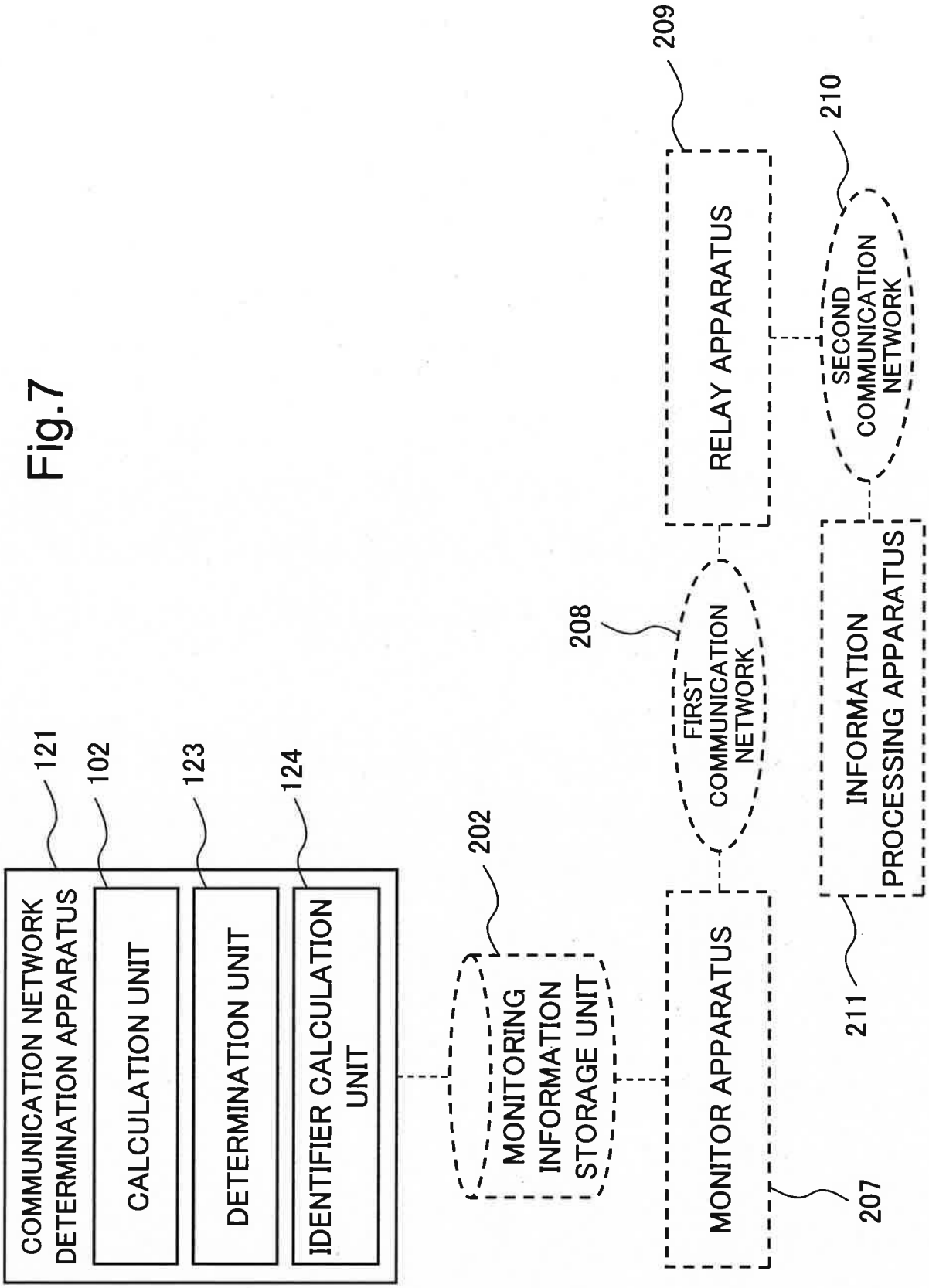

COMMUNICATION NETWORK DETERMINATION APPARATUS
121
CALCULATION UNIT
102
DETERMINATION UNIT
123
IDENTIFIER CALCULATION UNIT
124
MONITORING INFORMATION STORAGE UNIT
202
MONITOR APPARATUS
207
FIRST COMMUNICATION NETWORK
208
RELAY APPARATUS
209
SECOND COMMUNICATION NETWORK
210
INFORMATION PROCESSING APPARATUS
211

Fig.8

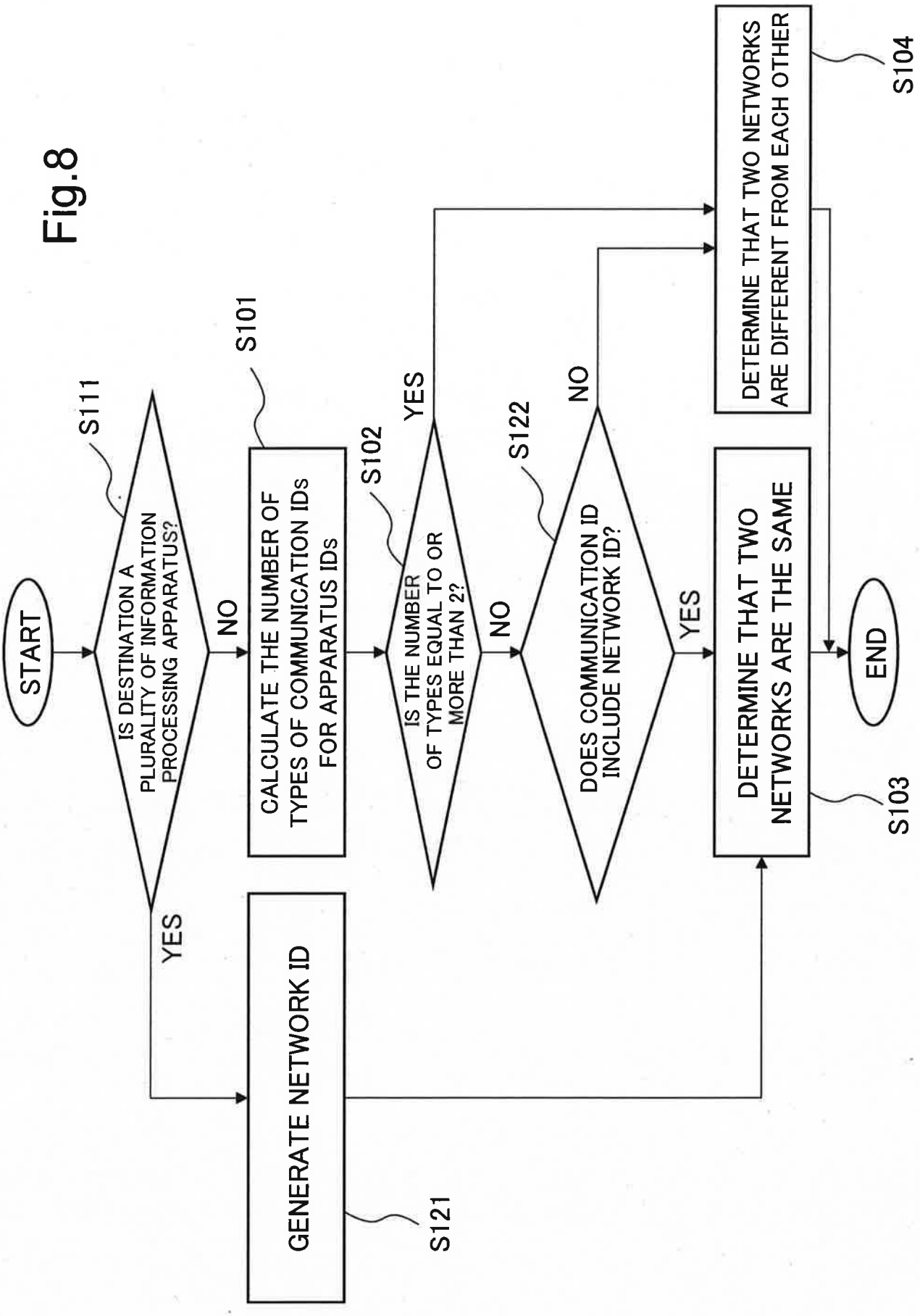

START
S111
IS DESTINATION A PLURALITY OF INFORMATION PROCESSING APPARATUS?
YES
NO
S101
CALCULATE THE NUMBER OF TYPES OF COMMUNICATION IDs FOR APPARATUS IDs
S102
IS THE NUMBER OF TYPES EQUAL TO OR MORE THAN 2?
YES
NO
S122
DOES COMMUNICATION ID INCLUDE NETWORK ID?
YES
NO
S121
GENERATE NETWORK ID
S103
DETERMINE THAT TWO NETWORKS ARE THE SAME
S104
DETERMINE THAT TWO NETWORKS ARE DIFFERENT FROM EACH OTHER
END

Fig.9

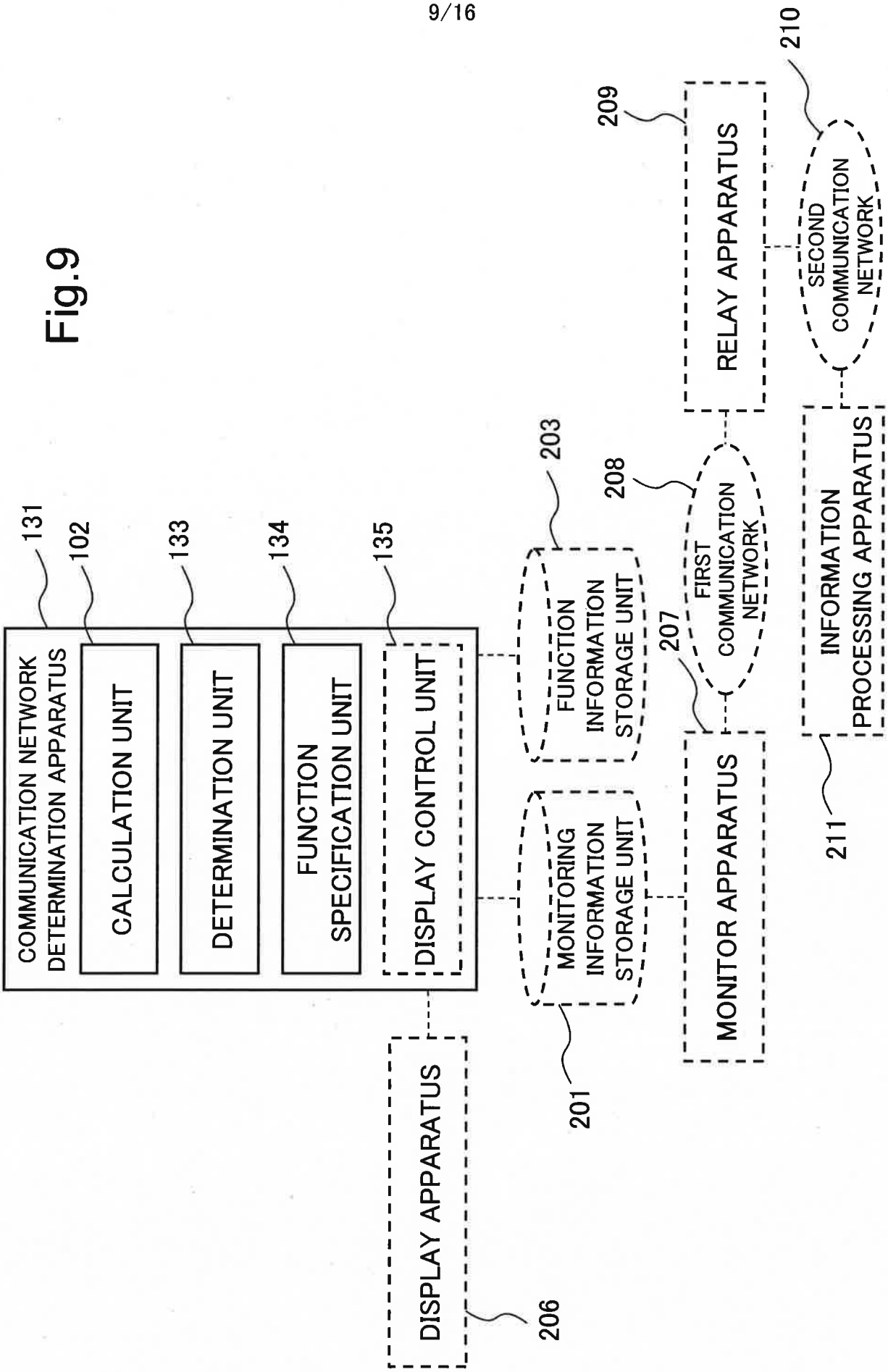

COMMUNICATION NETWORK DETERMINATION APPARATUS
131
CALCULATION UNIT
102
DETERMINATION UNIT
133
FUNCTION SPECIFICATION UNIT
134
DISPLAY CONTROL UNIT
135
FUNCTION INFORMATION STORAGE UNIT
203
MONITORING INFORMATION STORAGE UNIT
201
DISPLAY APPARATUS
206
FIRST COMMUNICATION NETWORK
207
208
MONITOR APPARATUS
RELAY APPARATUS
209
SECOND COMMUNICATION NETWORK
210
INFORMATION PROCESSING APPARATUS
211

Fig.10

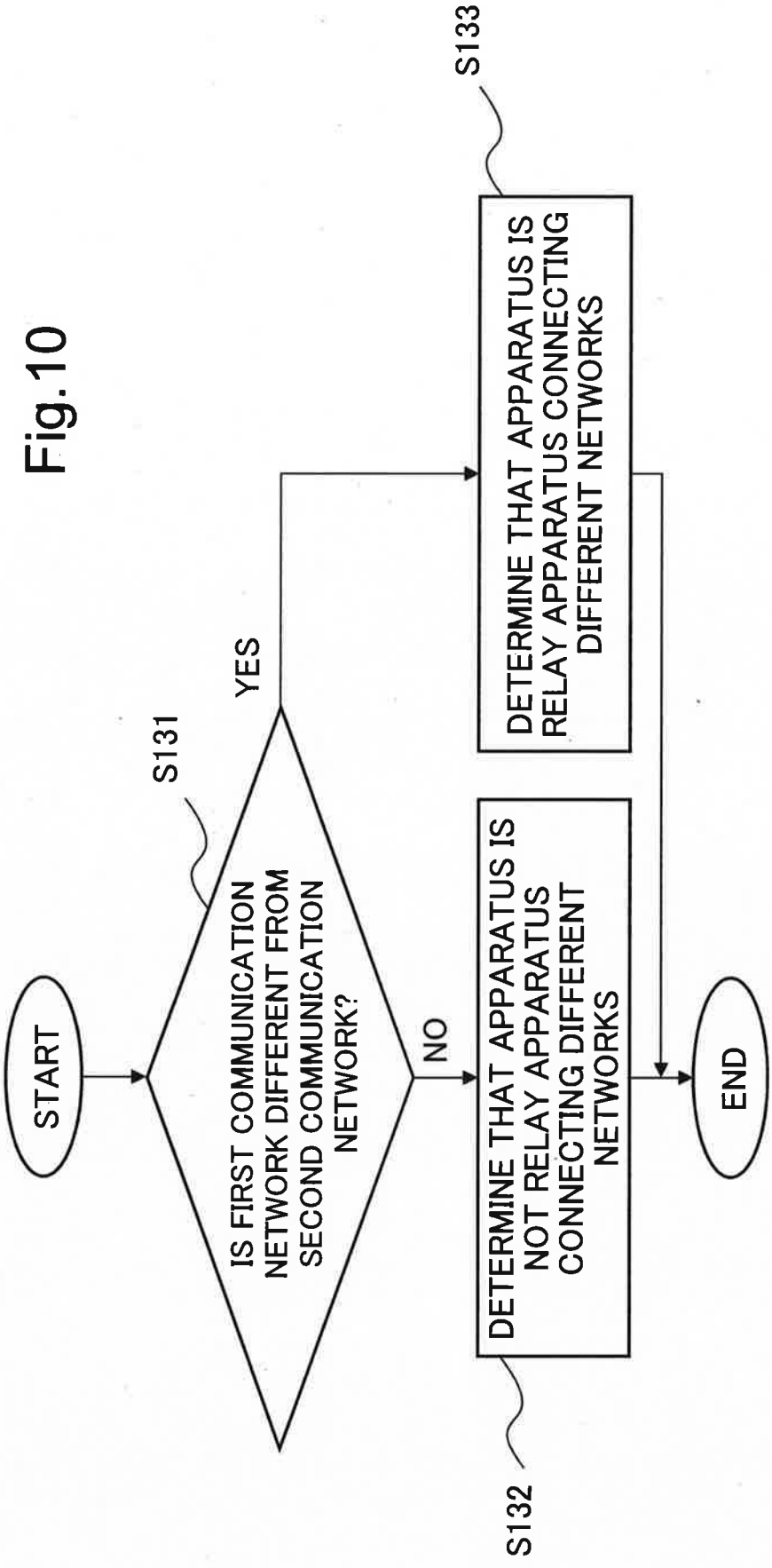

START
S131
IS FIRST COMMUNICATION NETWORK DIFFERENT FROM SECOND COMMUNICATION NETWORK?
YES
NO
S133
DETERMINE THAT APPARATUS IS RELAY APPARATUS CONNECTING DIFFERENT NETWORKS
S132
DETERMINE THAT APPARATUS IS NOT RELAY APPARATUS CONNECTING DIFFERENT NETWORKS
END

Fig.11

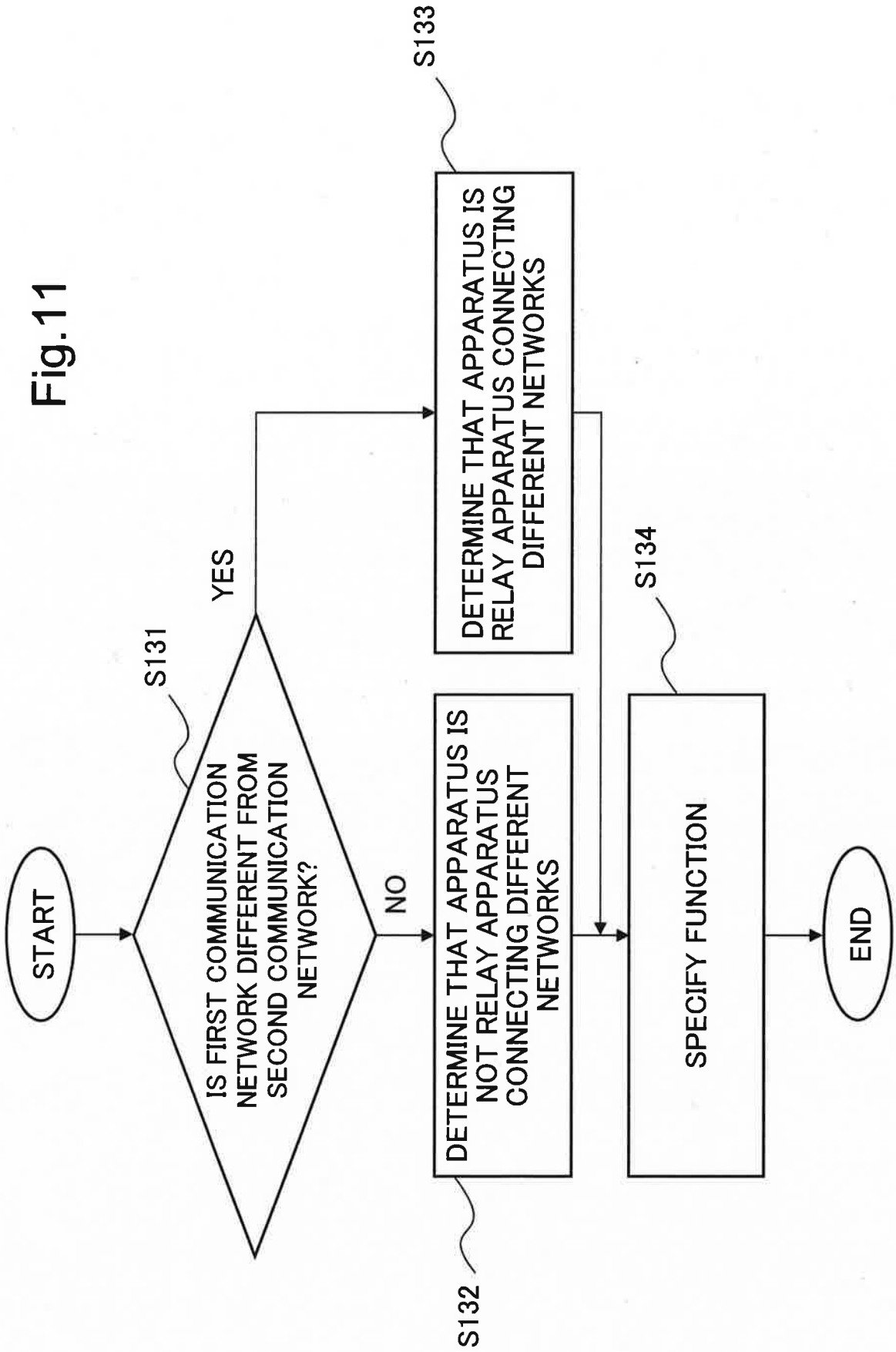
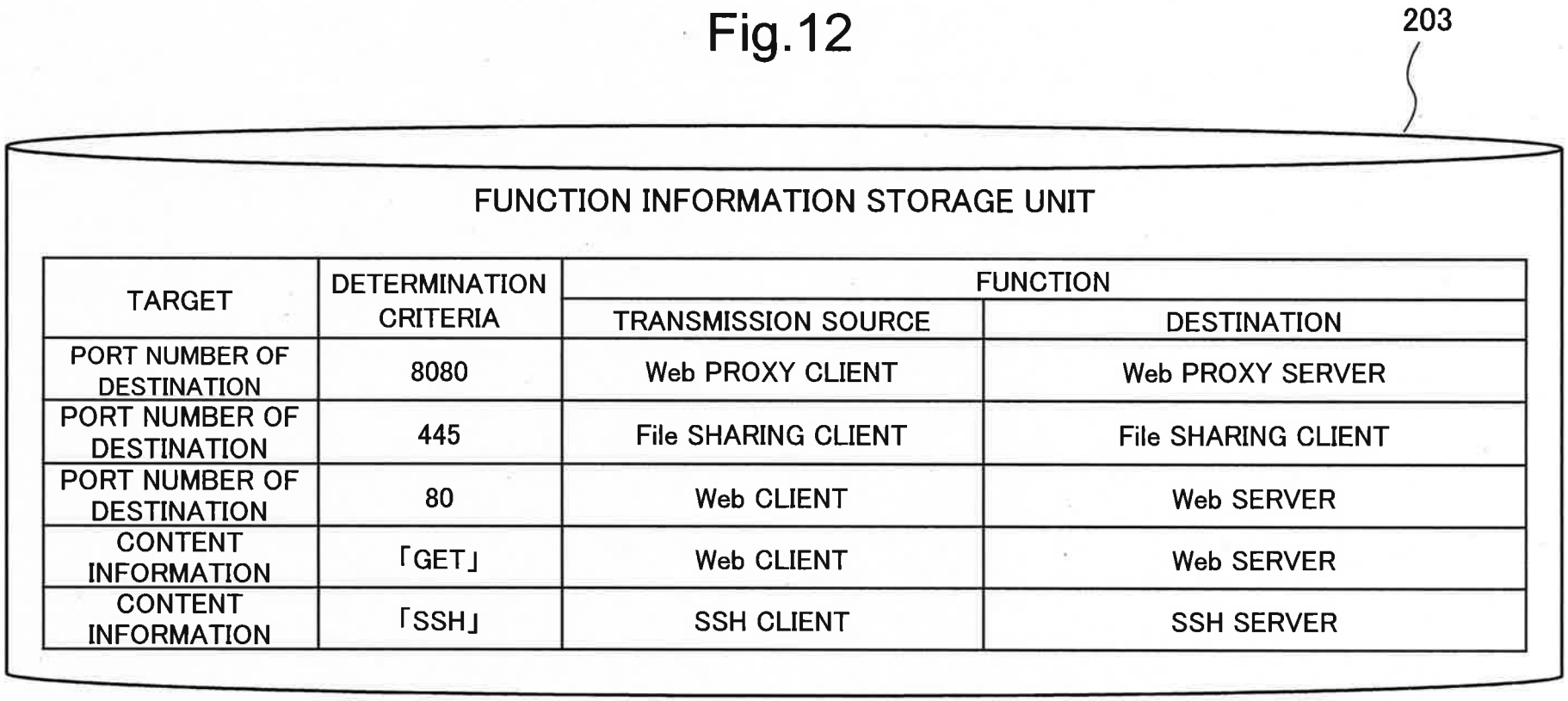

START
S131
IS FIRST COMMUNICATION NETWORK DIFFERENT FROM SECOND COMMUNICATION NETWORK?
YES
NO
S133
DETERMINE THAT APPARATUS IS RELAY APPARATUS CONNECTING DIFFERENT NETWORKS
S132
DETERMINE THAT APPARATUS IS NOT RELAY APPARATUS CONNECTING DIFFERENT NETWORKS
S134
SPECIFY FUNCTION
END

Fig.12



TARGET	DETERMINATION CRITERIA	FUNCTION	
		TRANSMISSION SOURCE	DESTINATION
PORT NUMBER OF DESTINATION	8080	Web PROXY CLIENT	Web PROXY SERVER
PORT NUMBER OF DESTINATION	445	File SHARING CLIENT	File SHARING CLIENT
PORT NUMBER OF DESTINATION	80	Web CLIENT	Web SERVER
CONTENT INFORMATION	「GET」	Web CLIENT	Web SERVER
CONTENT INFORMATION	「SSH」	SSH CLIENT	SSH SERVER

Fig.13

DISPLAY INFORMATION	
COMMUNICATION ID	FUNCTION
192.168.7.1	Web PROXY CLIENT
192.168.7.254	Web PROXY SERVER
192.168.7.3	File SHARING CLIENT
192.168.7.253	File SHARING SERVER
192.168.7.2	WEB PROXY CLIENT

Fig.14

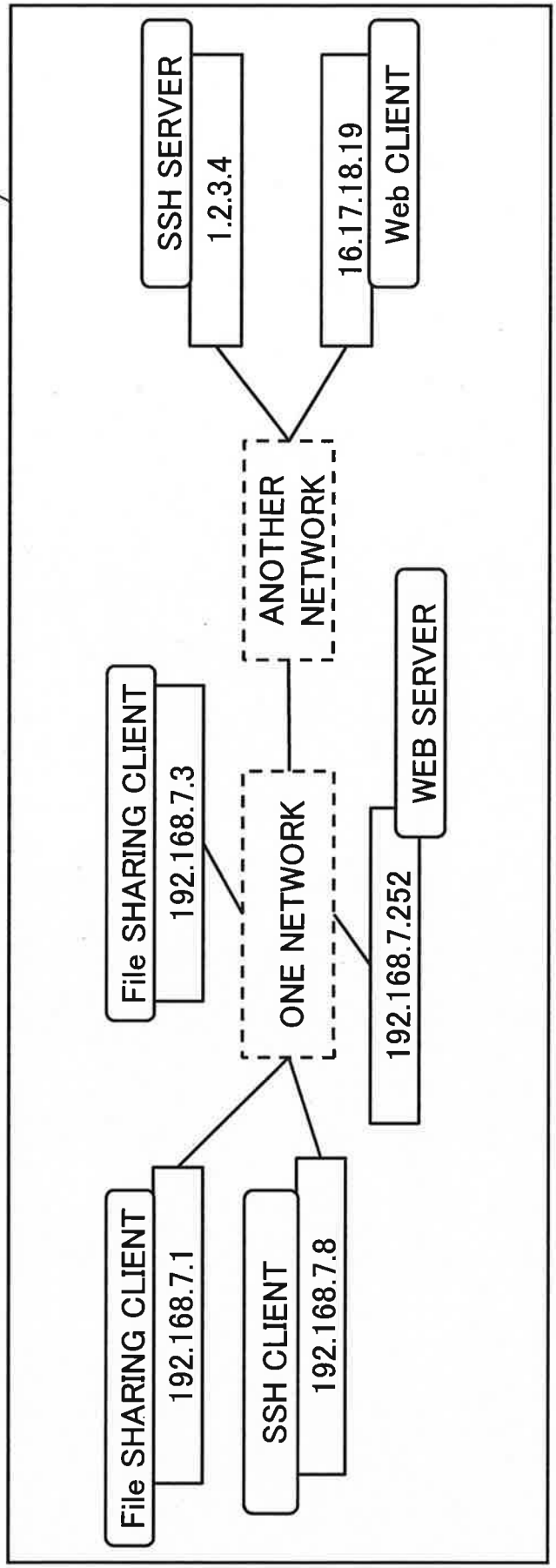

204
SSH SERVER
1.2.3.4
16.17.18.19
Web CLIENT
ANOTHER NETWORK
File SHARING CLIENT
192.168.7.3
ONE NETWORK
WEB SERVER
192.168.7.252
File SHARING CLIENT
192.168.7.1
SSH CLIENT
192.168.7.8

Fig.15

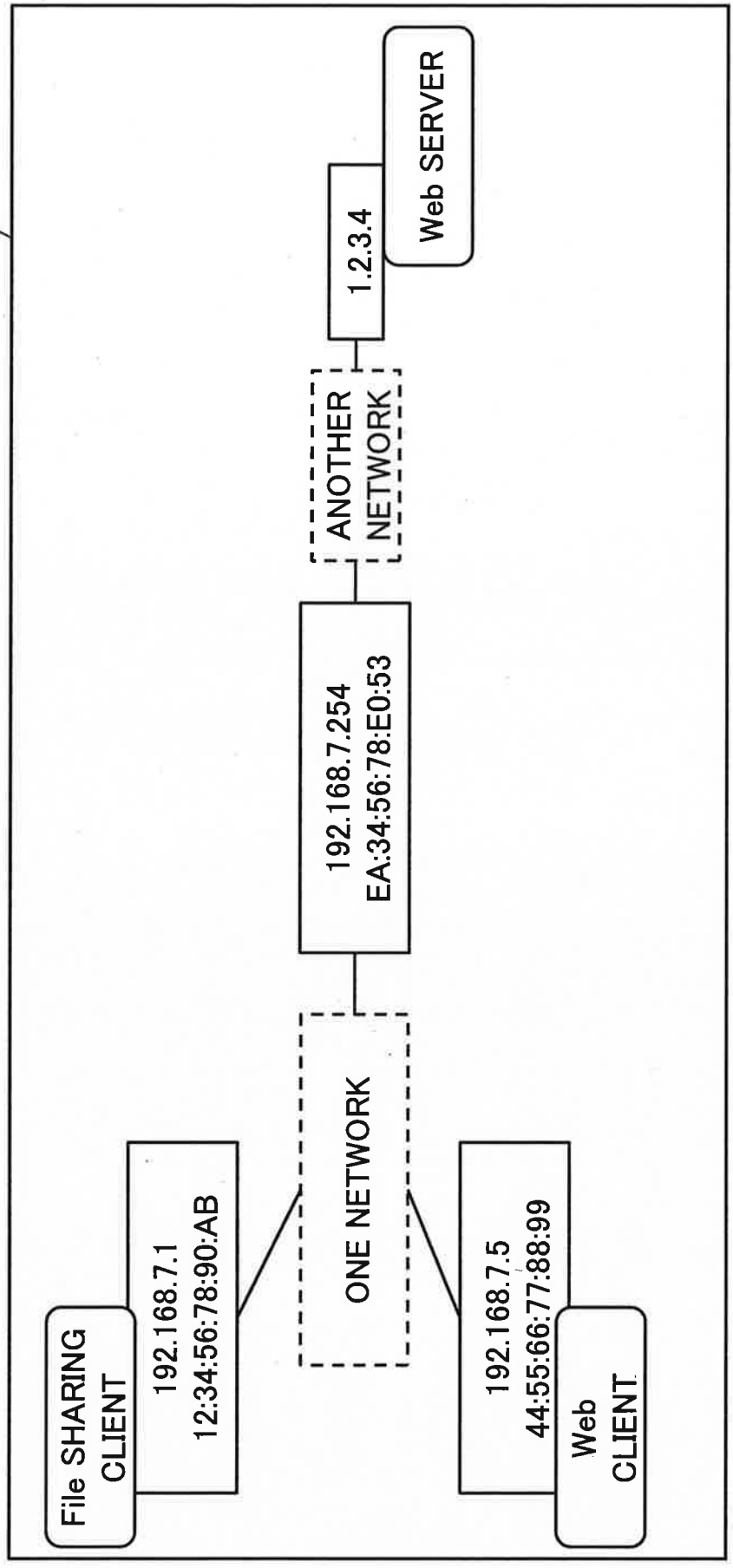
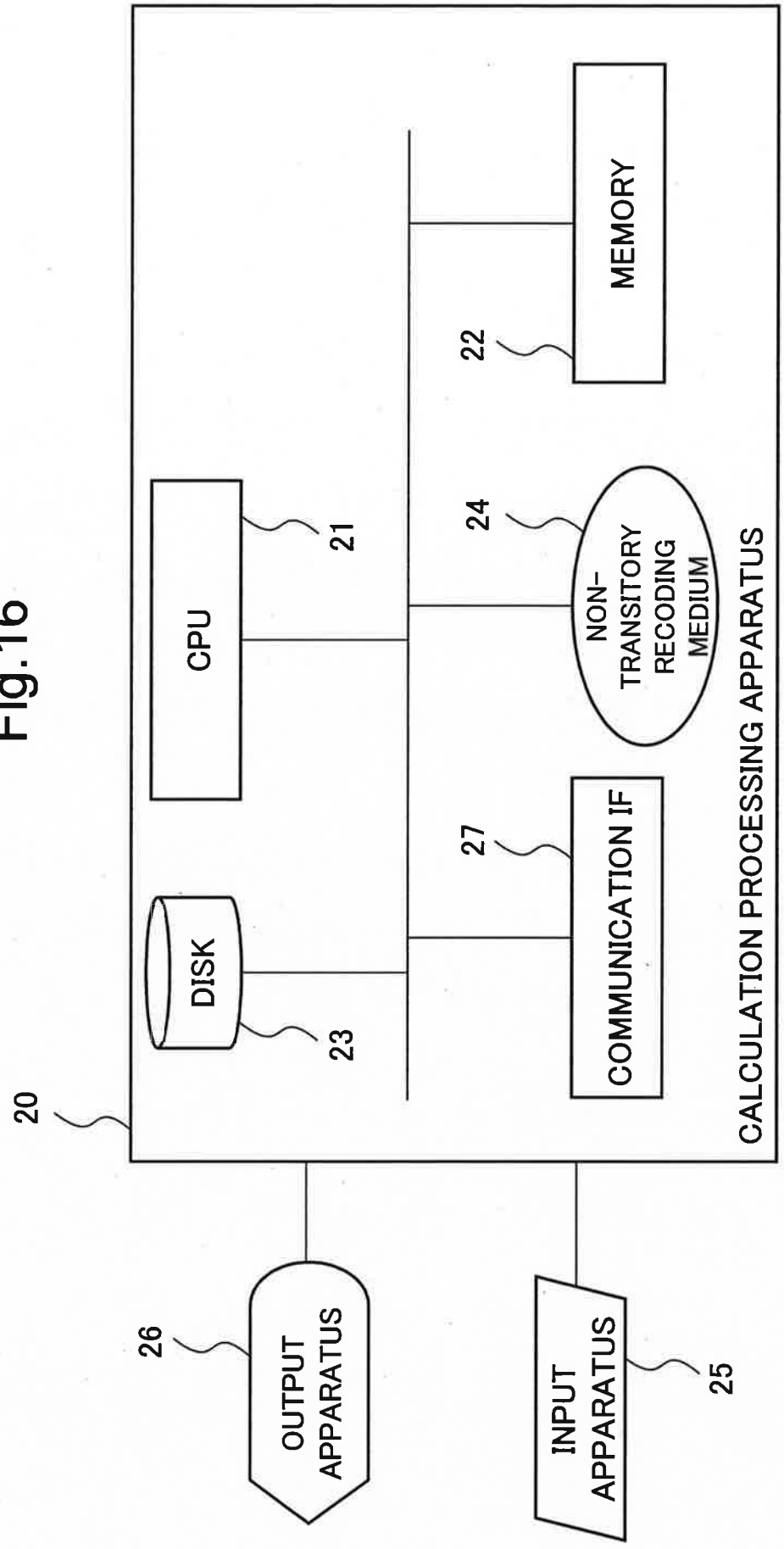

205
File SHARING CLIENT
192.168.7.1
12:34:56:78:90:AB
ONE NETWORK
192.168.7.254
EA:34:56:78:E0:53
ANOTHER NETWORK
1.2.3.4
Web SERVER
192.168.7.5
44:55:66:77:88:99
Web CLIENT

Fig.16


20
CALCULATION PROCESSING APPARATUS
CPU
21
MEMORY
22
DISK
23
NON-TRANSITORY RECODING MEDIUM
24
COMMUNICATION IF
27
OUTPUT APPARATUS
26
INPUT APPARATUS
25