FIG. 1

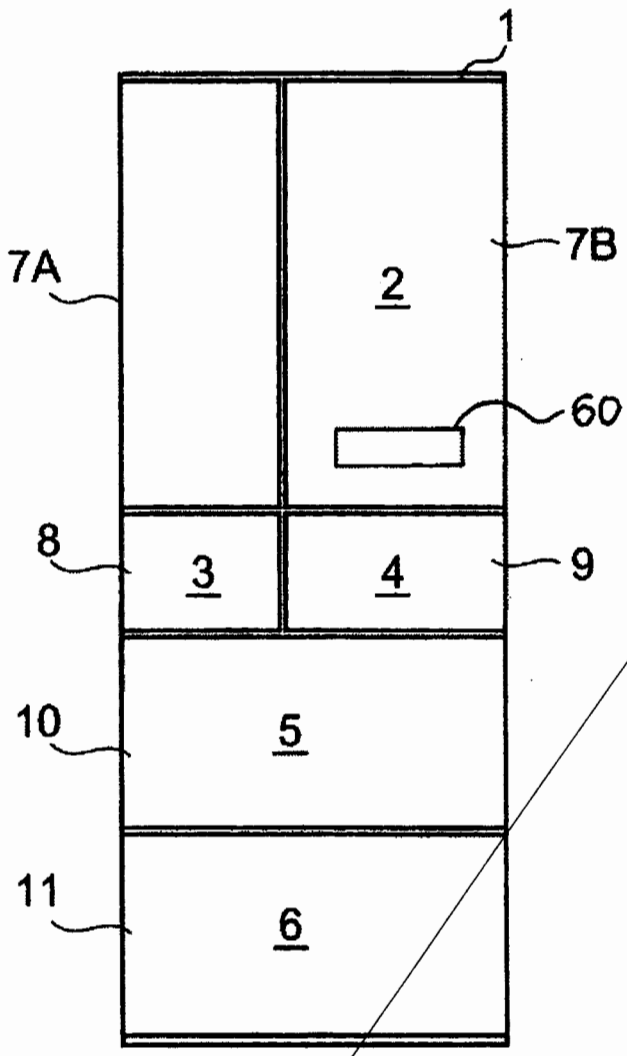


FIG. 2

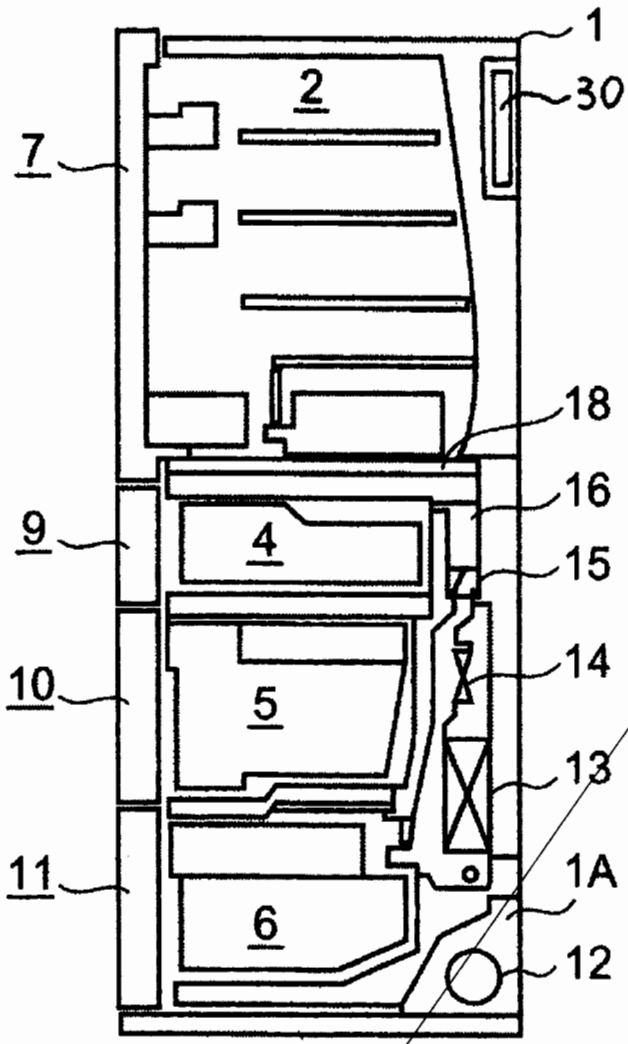


FIG. 3

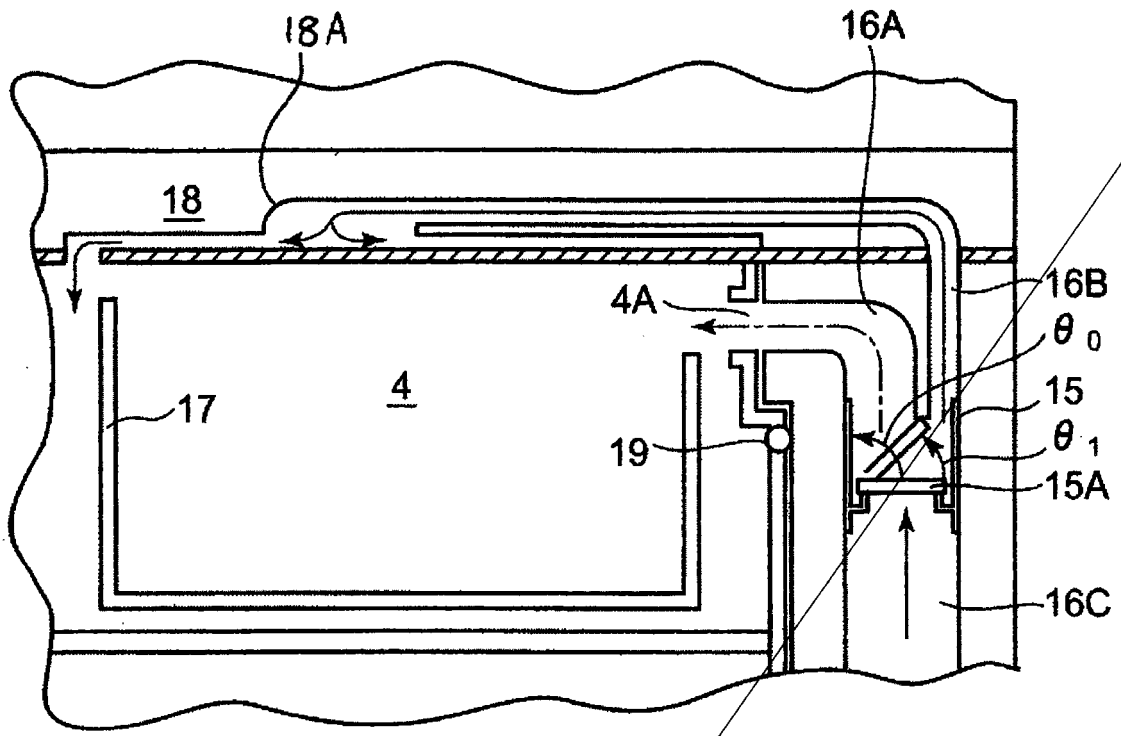


FIG. 4

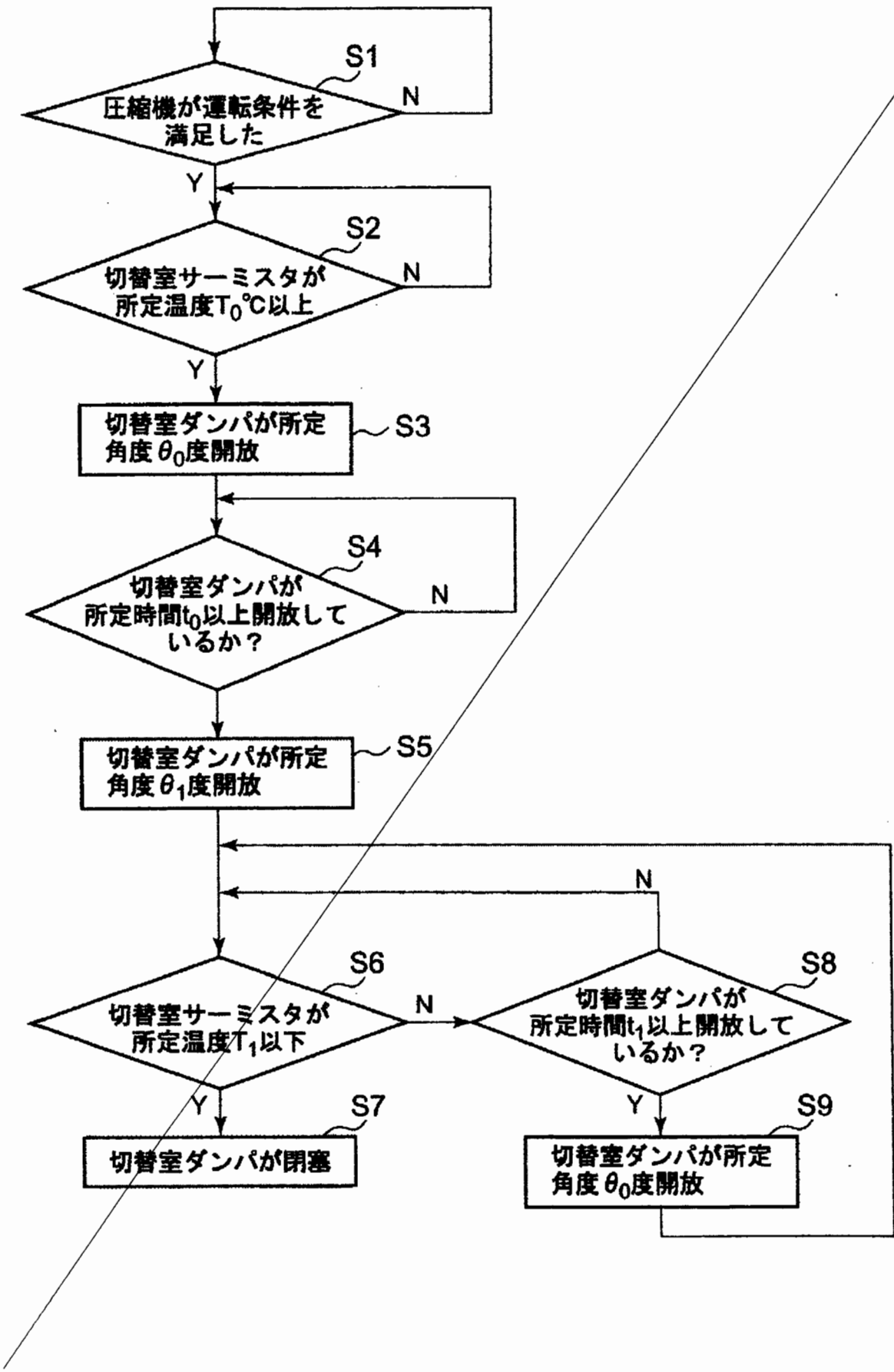

S1
圧縮機が運転条件を満足した
N
Y
S2
切替室サーミスタが所定温度T_0℃以上
N
Y
切替室ダンパが所定角度θ_0度開放
S3
S4
切替室ダンパが所定時間t_0以上開放しているか？
N
切替室ダンパが所定角度θ_1度開放
S5
N
S6
切替室サーミスタが所定温度T_1以下
N
S8
切替室ダンパが所定時間t_1以上開放しているか？
Y
S7
切替室ダンパが閉塞
Y
S9
切替室ダンパが所定角度θ_0度開放

FIG. 5

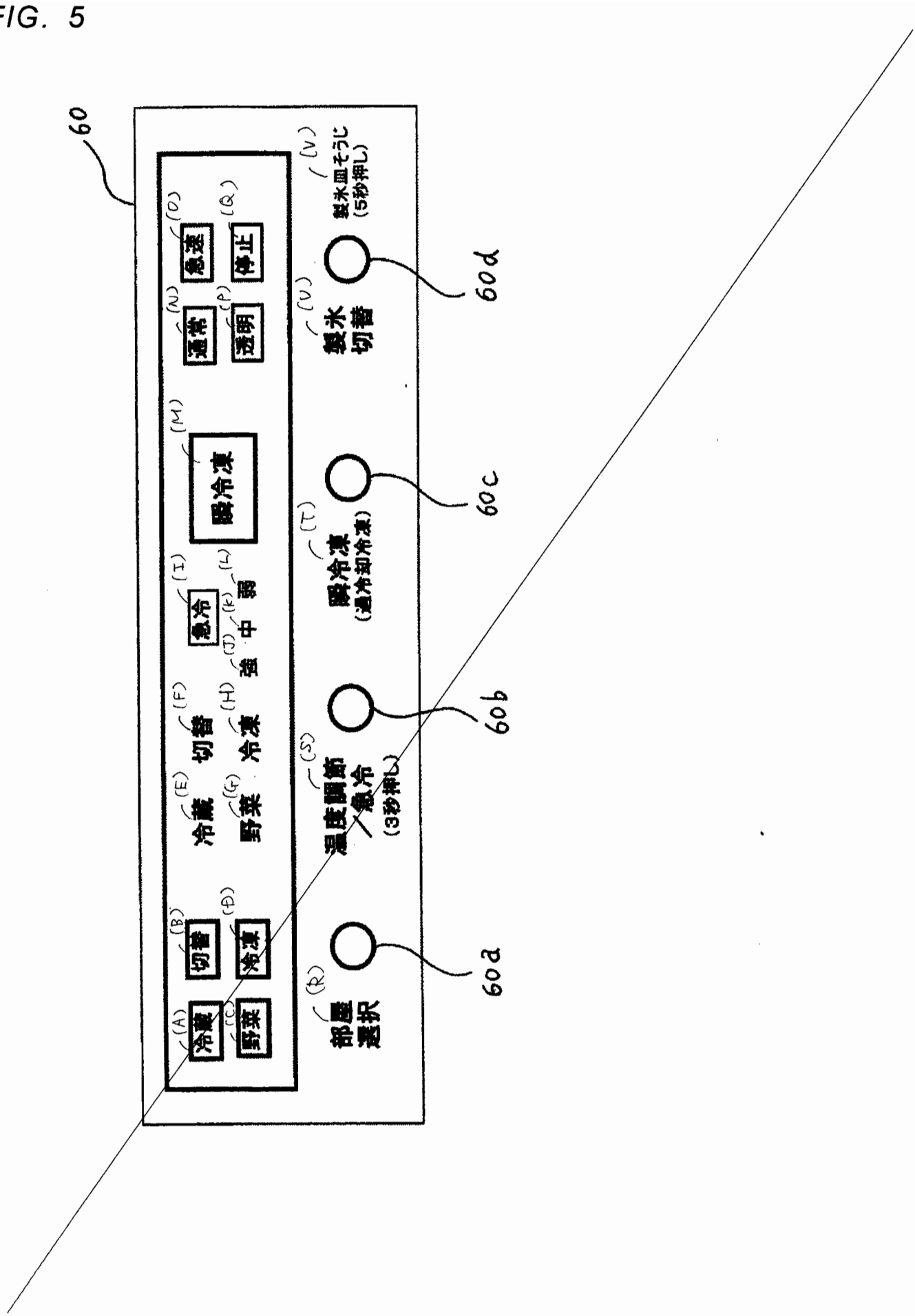

60
(A) 冷蔵
(B) 切替
(C) 野菜
(D) 冷凍
(E) 冷蔵
(F) 切替
(G) 野菜
(H) 冷凍
(I) 急冷
(J) 通・中
(K) 部
(L) 屋
(M) 瞬冷凍
(N) 通常
(O) 急速
(P) 透明
(Q) 停止
(R) 部屋選択
(S) 温度調節 / 急冷 (3秒押し)
(T) 瞬冷凍 (通常切冷凍)
(U) 製氷切替
(V) 製氷皿そうじ (5秒押し)
60a
60b
60c
60d

FIG. 6

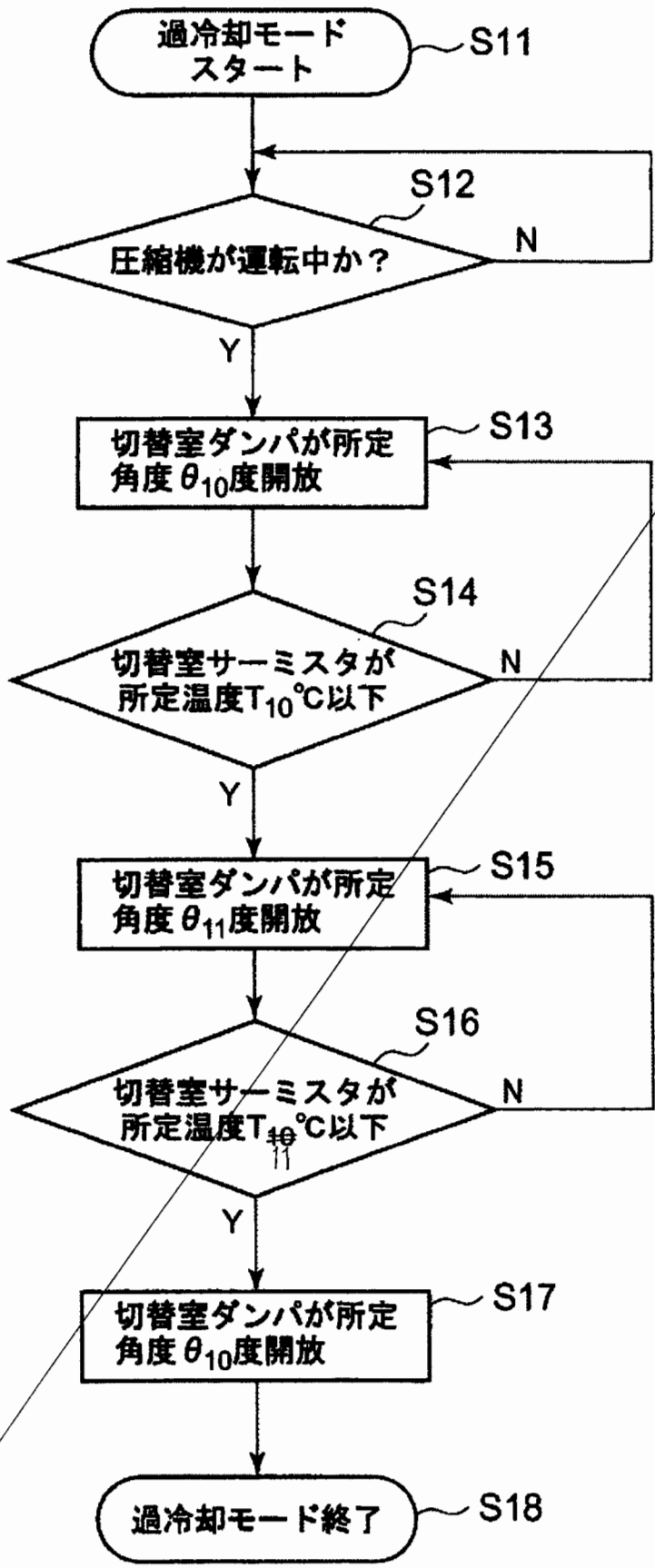

過冷却モード
スタート
S11
S12
圧縮機が運転中か？
N
Y
切替室ダンパが所定
角度θ10度開放
S13
S14
切替室サーミスタが
所定温度T10℃以下
N
Y
切替室ダンパが所定
角度θ11度開放
S15
S16
切替室サーミスタが
所定温度T~~10~~11℃以下
N
Y
切替室ダンパが所定
角度θ10度開放
S17
過冷却モード終了
S18

FIG. 7

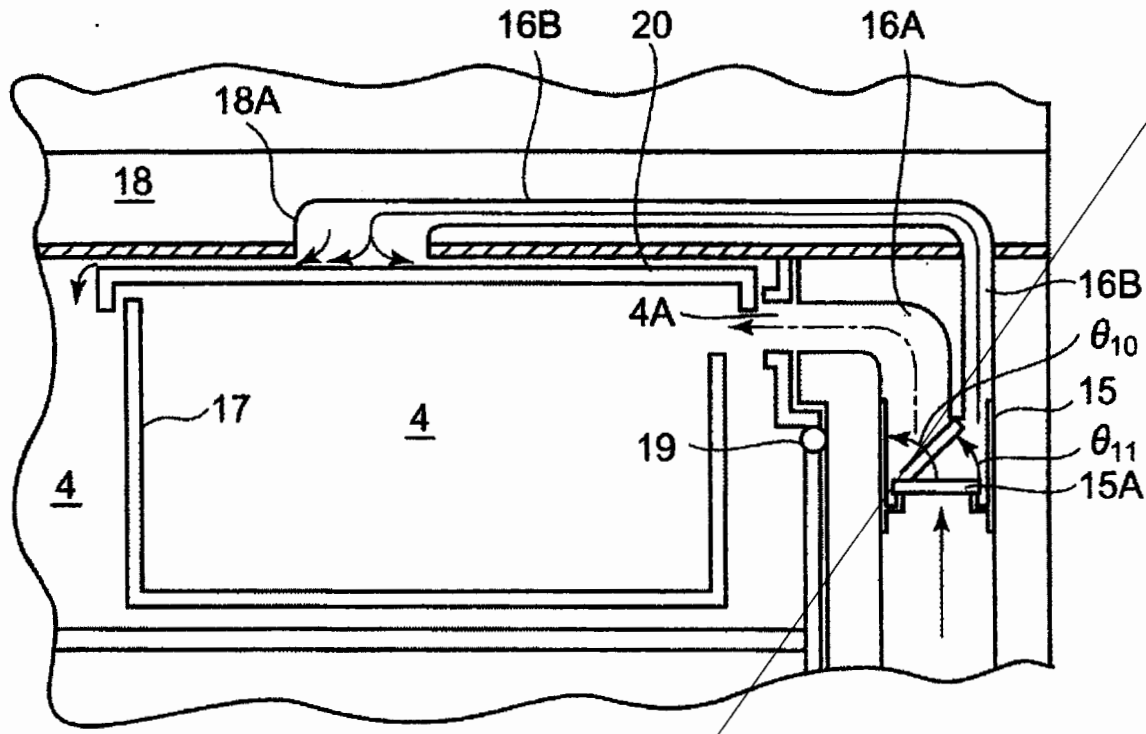

16B
20
16A
18A
18
16B
4A
θ_{10}
15
17
4
19
θ_{11}
4
15A

FIG. 8

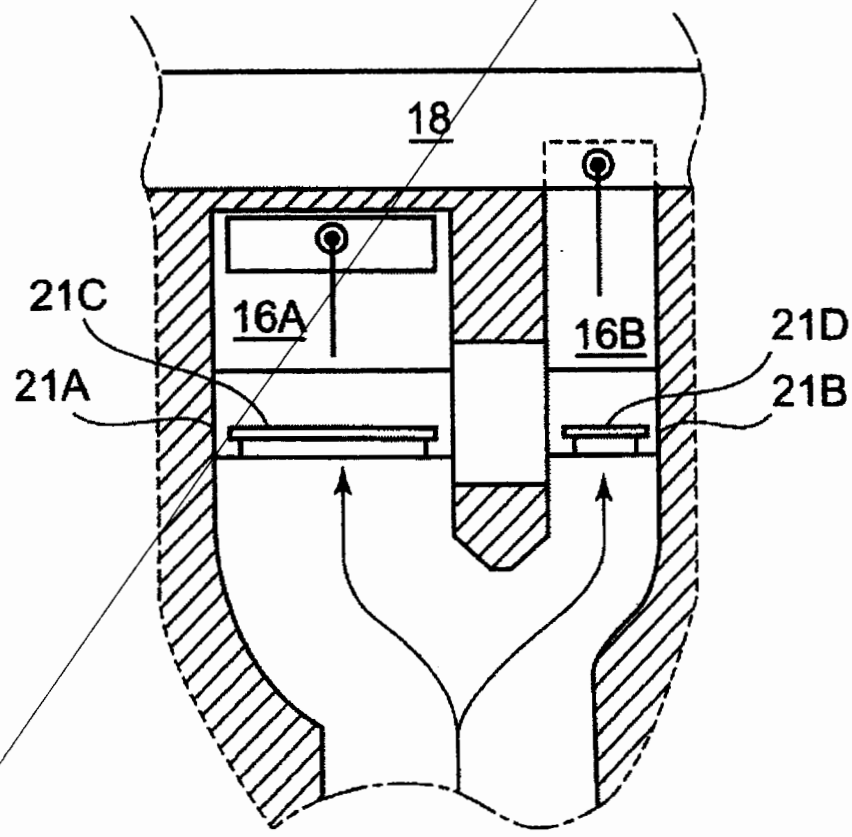

18
21C
16A
16B
21D
21A
21B

FIG. 9

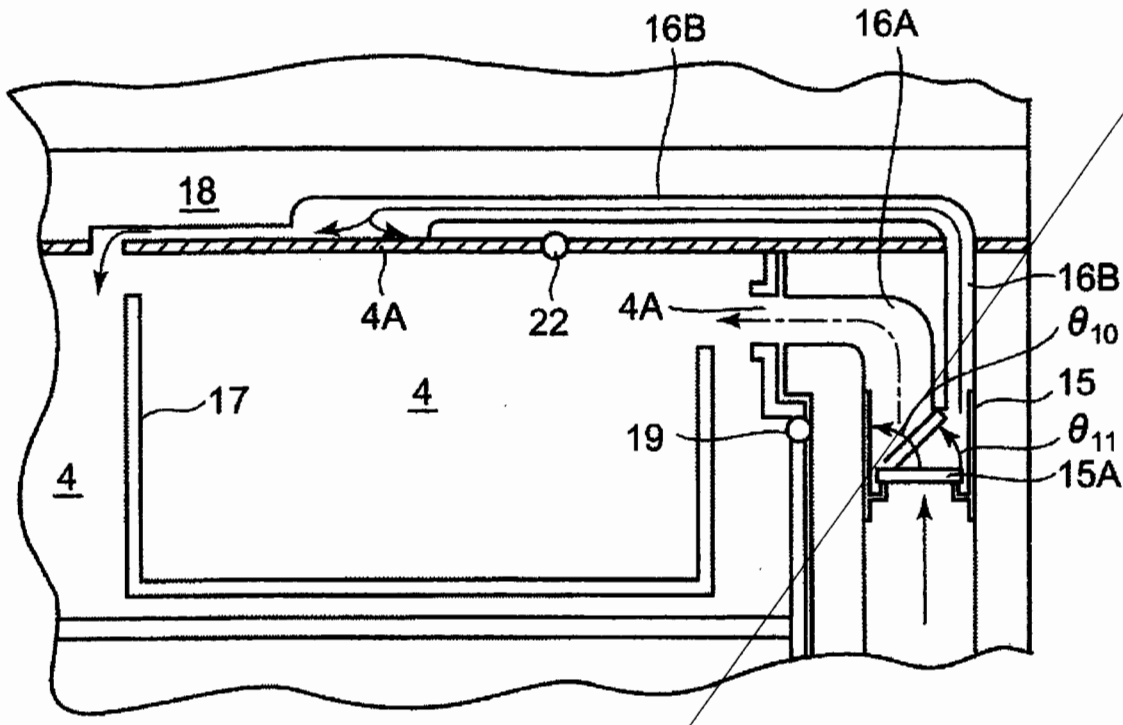


FIG. 10

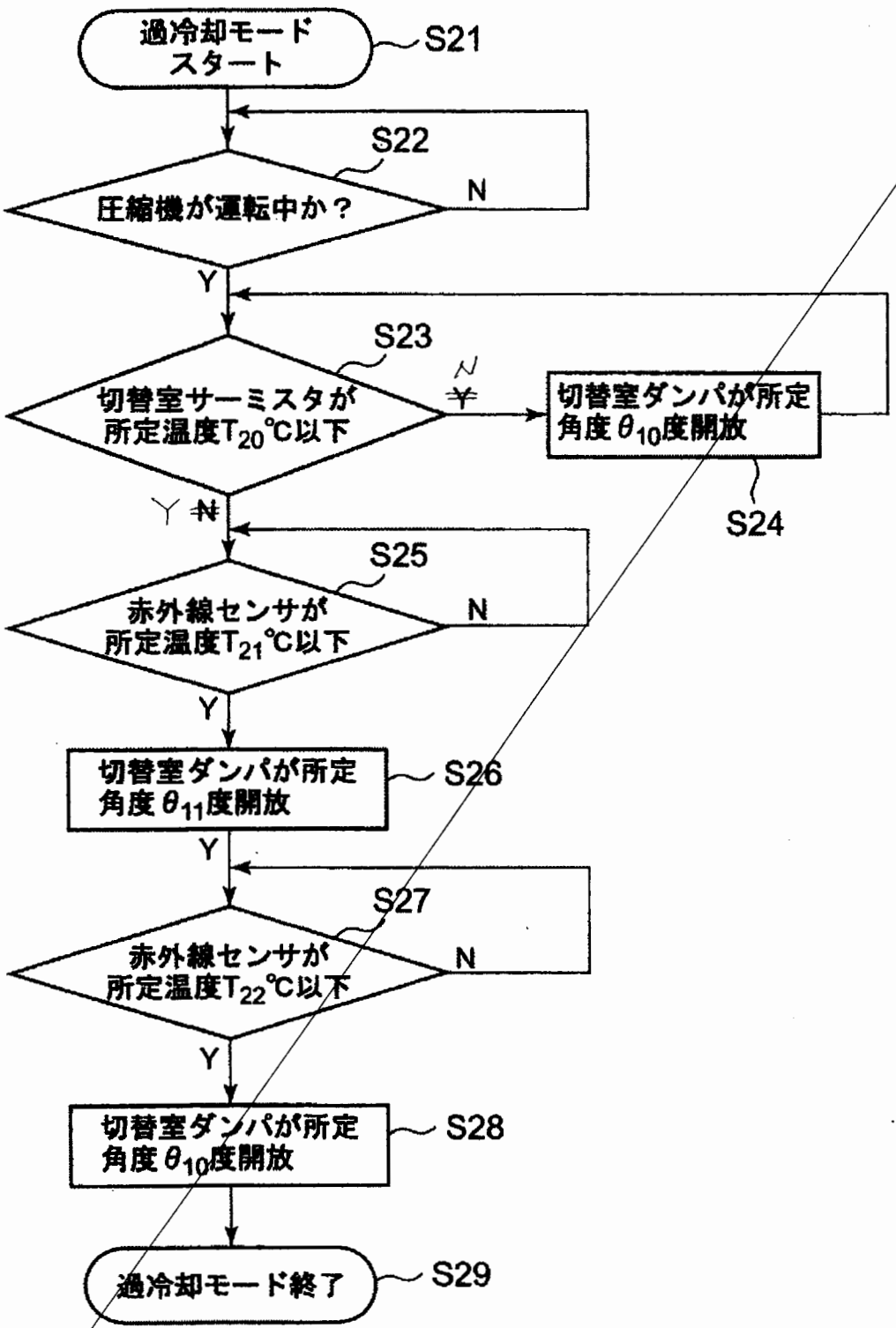

過冷却モード
スタート
S21
S22
圧縮機が運転中か？
N
Y
S23
切替室サーミスタが
所定温度T20℃以下
N
切替室ダンパが所定
角度θ10度開放
S24
Y
N
S25
赤外線センサが
所定温度T21℃以下
N
Y
切替室ダンパが所定
角度θ11度開放
S26
Y
S27
赤外線センサが
所定温度T22℃以下
N
Y
切替室ダンパが所定
角度θ10度開放
S28
過冷却モード終了
S29

Fig. 4

S1: COMPRESSOR HAS SATISFIED RUNNING CONDITION?

S2: TEMPERATURE OF CONVERTIBLE COMPARTMENT DETECTED BY THERMISTOR IS AT PRESCRIBED TEMPERATURE T_0°C OR HIGHER?

S3: CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ_0

S4: CONVERTIBLE COMPARTMENT DAMPER OPENS FOR PRESCRIBED TIME t_0 OR LONGER?

S5: CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ_1

S6: TEMPERATURE CONVERTIBLE COMPARTMENT DETECTED BY THERMISTOR IS AT PRESCRIBED TEMPERATURE T_1°C OR LOWER?

S7: CONVERTIBLE COMPARTMENT DAMPER IS CLOSED

S8: CONVERTIBLE COMPARTMENT DAMPER OPENS FOR PRESCRIBED TIME t_1 OR LONGER?

S9: CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ_0

Fig. 5

(A) REFRIGERATING
(B) CONVERTIBLE
(C) VEGETABLE
(D) FREEZING
(E) REFRIGERATING
(F) CONVERTIBLE
(G) VEGETABLE
(H) FREEZING
(I) FAST COOLING
(J) STRONG
(K) MEDIUM
(L) WEAK
(M) INSTANTANEOUS FREEZING
(N) NORMAL
(O) FAST
(P) TRANSPARENT
(Q) STOP
(R) COMPARTMENT SELECTION
(S) TEMPERATURE REGUFATING/FAST COOLING (3 SEC PUSH)
(T) INSTANTANOUS FREEZING (SUPER-COOLING FREEZING)
(U) ICE-MAKING CHANGE
(V) ICE-MAKING PLATE CREENING (5 SEC PUSH)

Fig. 6

S11: SUPER-COOLING MODE STARTS

S12: COMPRESSOR IS RUNNING?

S13: CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ_{10}

S14: TEMPERATURE OF CONVERTIBLE COMPARTMENT DETECTED BY THERMISTOR IS AT PRESCRIBED TEMPERATURE T_{10}°C OR LOWER?

S15: CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANBLE θ_{11}

S16: CONVERTIBLE COMPARTMENT THERMISTOR IS AT PRESCRIBED TEMPERATURE T_{11}°C OR LOWER?

S17: CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ_{10}

S18: SUPER-COOLING MODE ENDS

Fig. 10

S21: SUPER-COOLING MODE STARTS

S22: COMPRESSOR IS RUNNING?

S23: TEMPERATURE OF CONVERTIBLE COMPARTMENT DETECTED BY THERMISTOR IS AT PRESCRIBED TEMPERATURE T_{20}°C OR LOWER?

S24: CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ_{10}

S25: INFRARED SENSOR IS AT PRESCRIBED TEMPERATURE T_{21}°C OR LOWER

S26: CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANBLE θ_{11}

S27: INFRARED SENSOR IS AT PRESCRIBED TEMPERATURE T_{22}°C OR LOWER

S28: CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ_{10}

S29: SUPER-COOLING MODE ENDS

FIG. 1

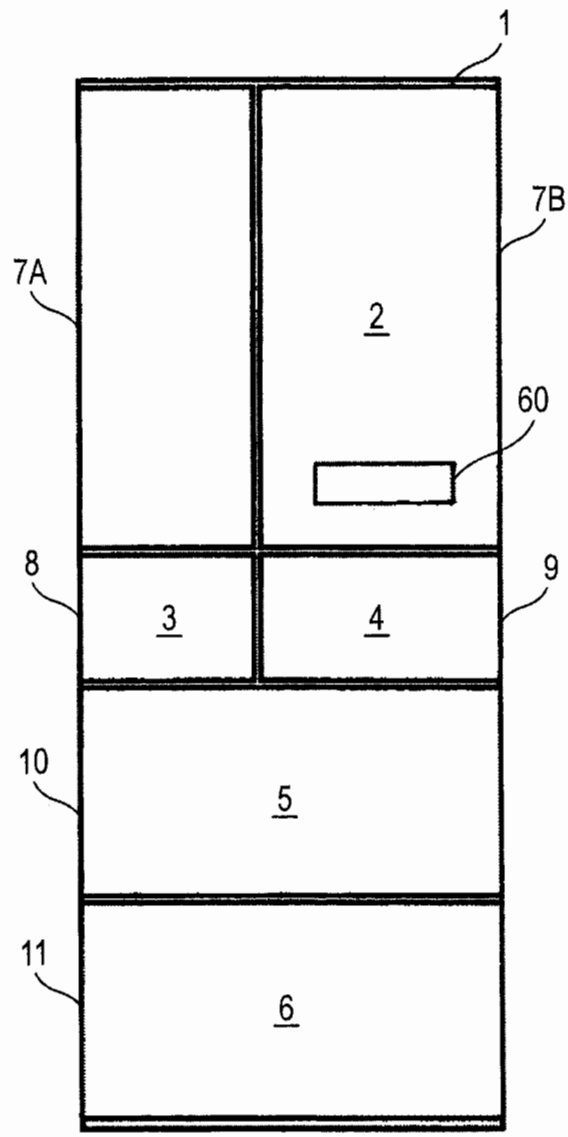


FIG. 2

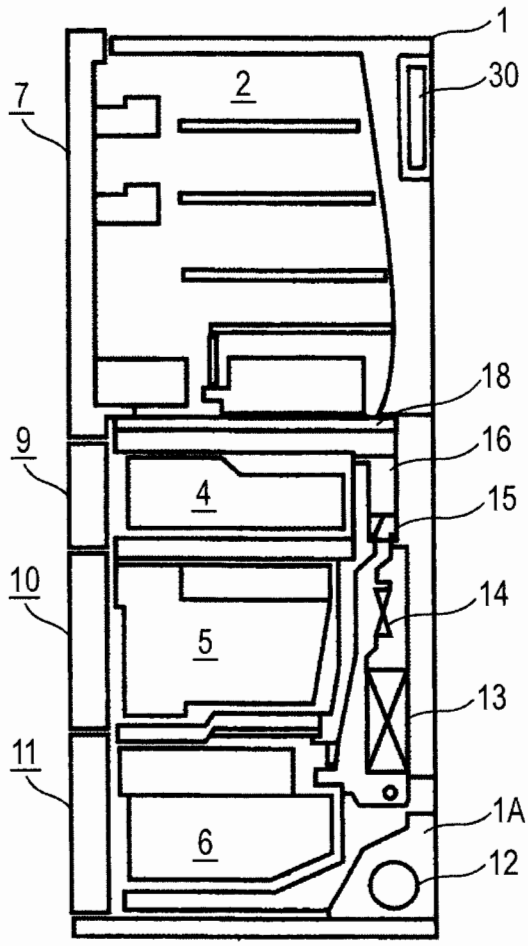


FIG. 3

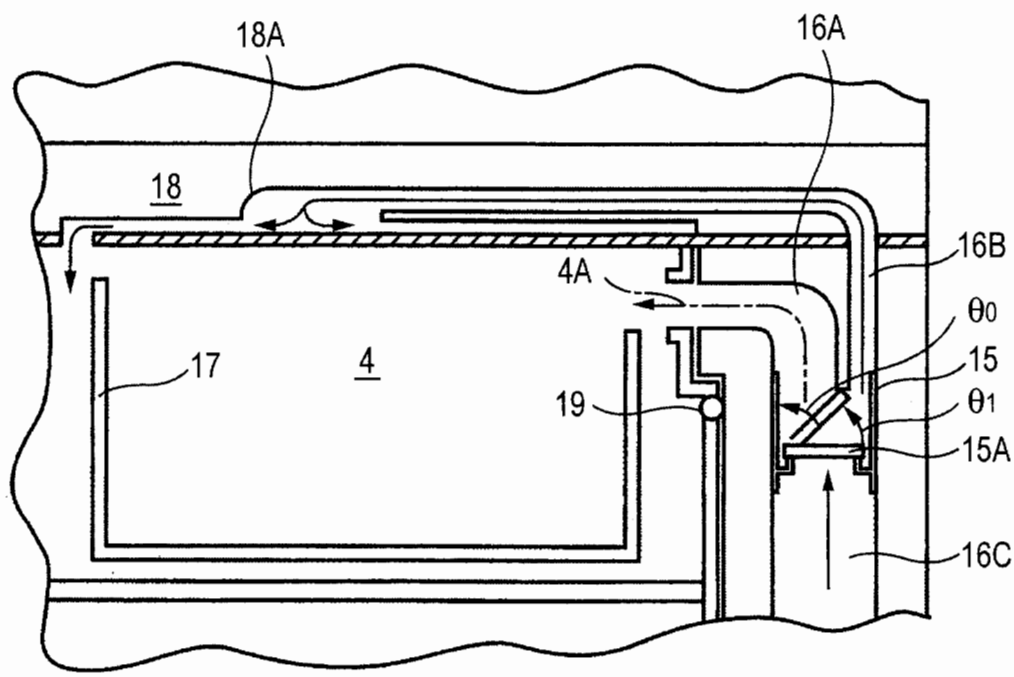


FIG. 4

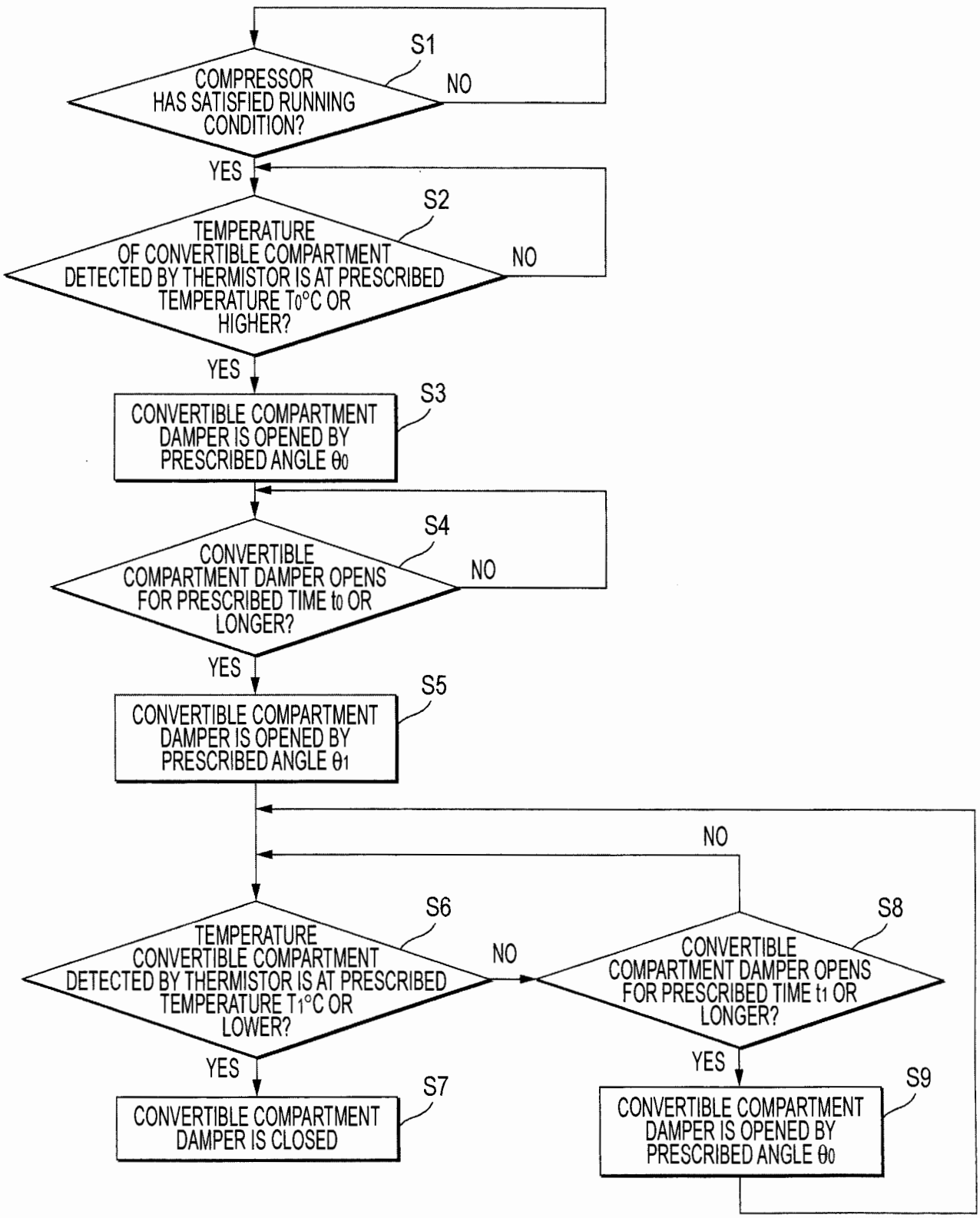

S1
COMPRESSOR HAS SATISFIED RUNNING CONDITION?
NO
YES
S2
TEMPERATURE OF CONVERTIBLE COMPARTMENT DETECTED BY THERMISTOR IS AT PRESCRIBED TEMPERATURE T0°C OR HIGHER?
NO
YES
S3
CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ0
S4
CONVERTIBLE COMPARTMENT DAMPER OPENS FOR PRESCRIBED TIME t0 OR LONGER?
NO
YES
S5
CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ1
NO
S6
TEMPERATURE CONVERTIBLE COMPARTMENT DETECTED BY THERMISTOR IS AT PRESCRIBED TEMPERATURE T1°C OR LOWER?
NO
S8
CONVERTIBLE COMPARTMENT DAMPER OPENS FOR PRESCRIBED TIME t1 OR LONGER?
YES
YES
S7
CONVERTIBLE COMPARTMENT DAMPER IS CLOSED
S9
CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ0

FIG.5

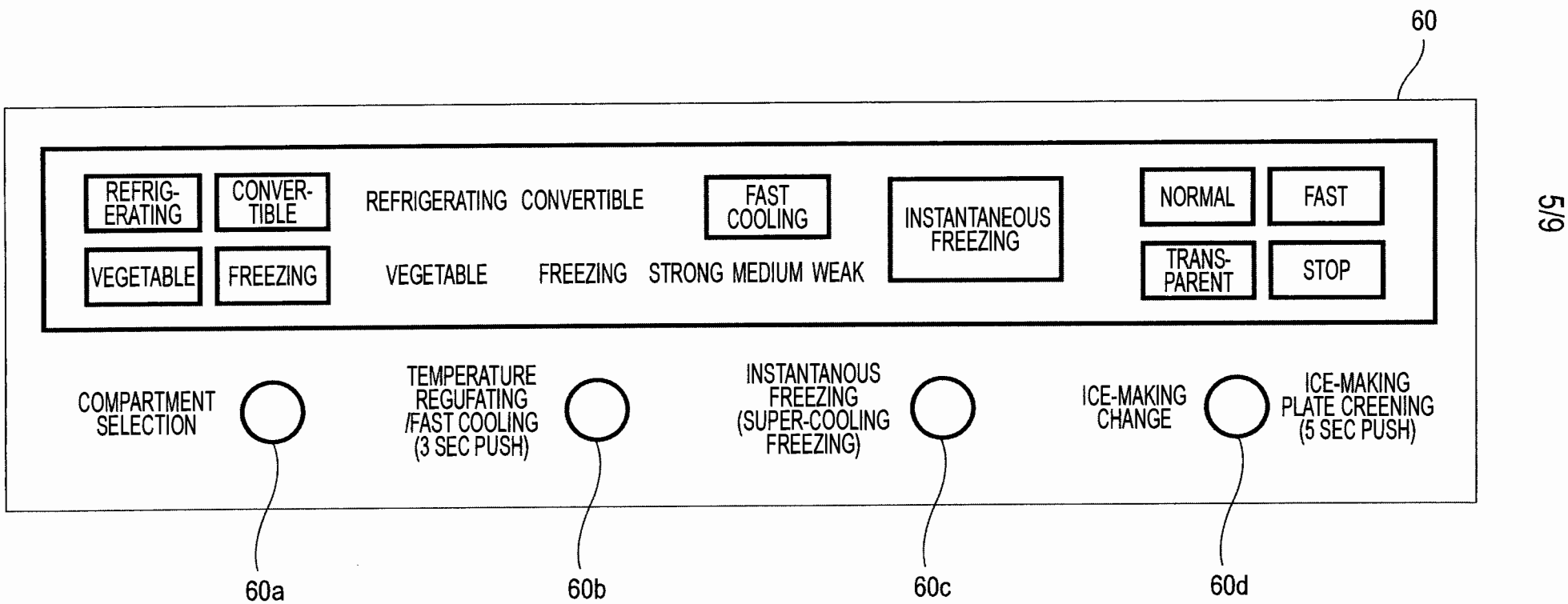

60
REFRIG-ERATING
CONVER-TIBLE
REFRIGERATING CONVERTIBLE
FAST COOLING
INSTANTANEOUS FREEZING
NORMAL
FAST
VEGETABLE
FREEZING
VEGETABLE FREEZING STRONG MEDIUM WEAK
TRANS-PARENT
STOP
COMPARTMENT SELECTION
TEMPERATURE REGUFATING /FAST COOLING (3 SEC PUSH)
INSTANTANOUS FREEZING (SUPER-COOLING FREEZING)
ICE-MAKING CHANGE
ICE-MAKING PLATE CREENING (5 SEC PUSH)
60a
60b
60c
60d

FIG. 6

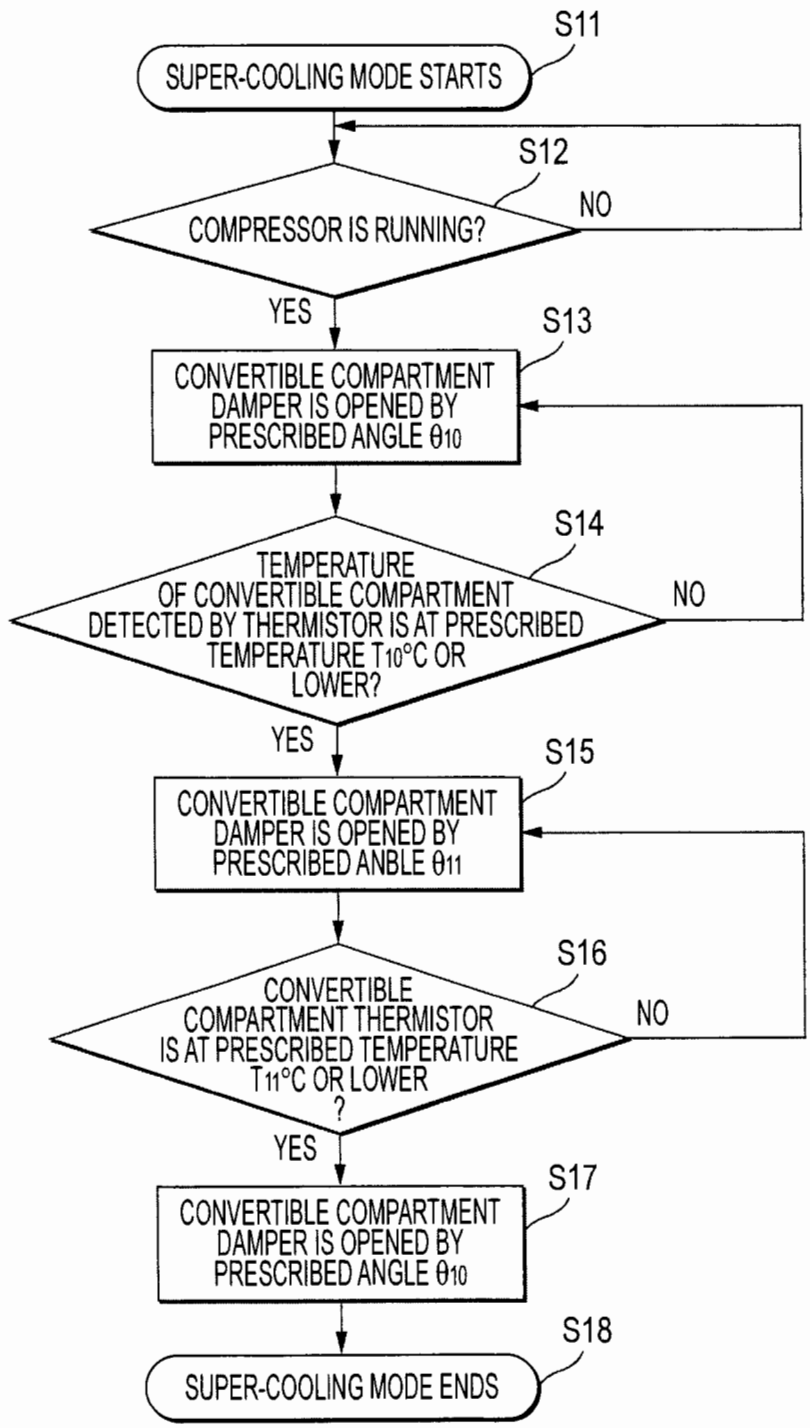

S11
SUPER-COOLING MODE STARTS
S12
COMPRESSOR IS RUNNING?
NO
YES
S13
CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ10
S14
TEMPERATURE OF CONVERTIBLE COMPARTMENT DETECTED BY THERMISTOR IS AT PRESCRIBED TEMPERATURE T10°C OR LOWER?
NO
YES
S15
CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANBLE θ11
S16
CONVERTIBLE COMPARTMENT THERMISTOR IS AT PRESCRIBED TEMPERATURE T11°C OR LOWER ?
NO
YES
S17
CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ10
S18
SUPER-COOLING MODE ENDS

FIG. 7

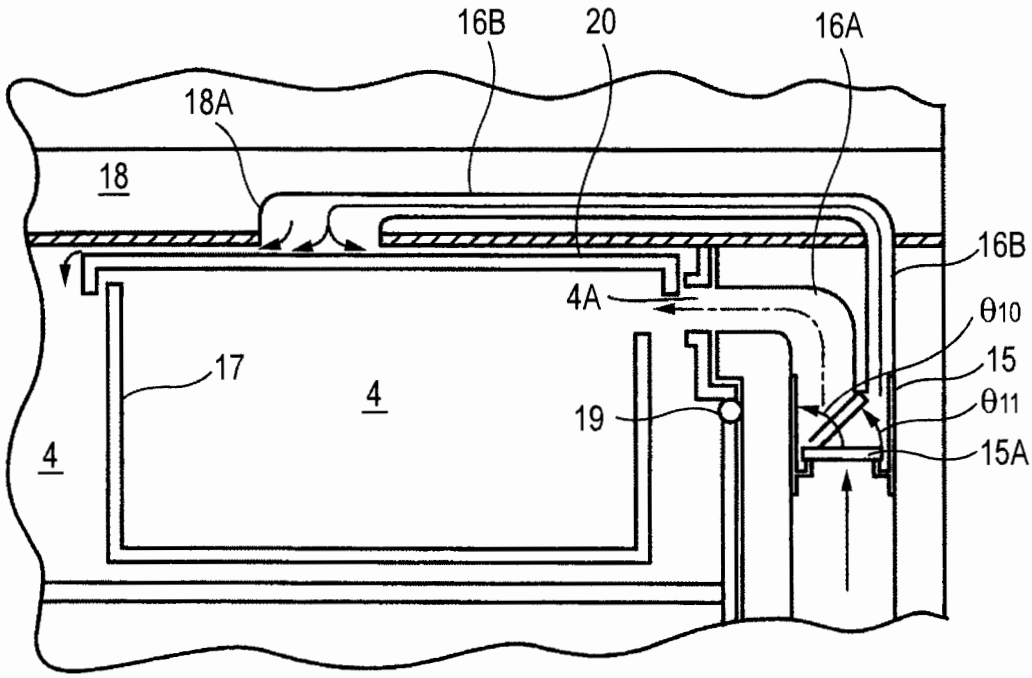

16B
20
16A
18A
18
16B
4A
θ10
15
θ11
15A
17
4
19
4

FIG. 8

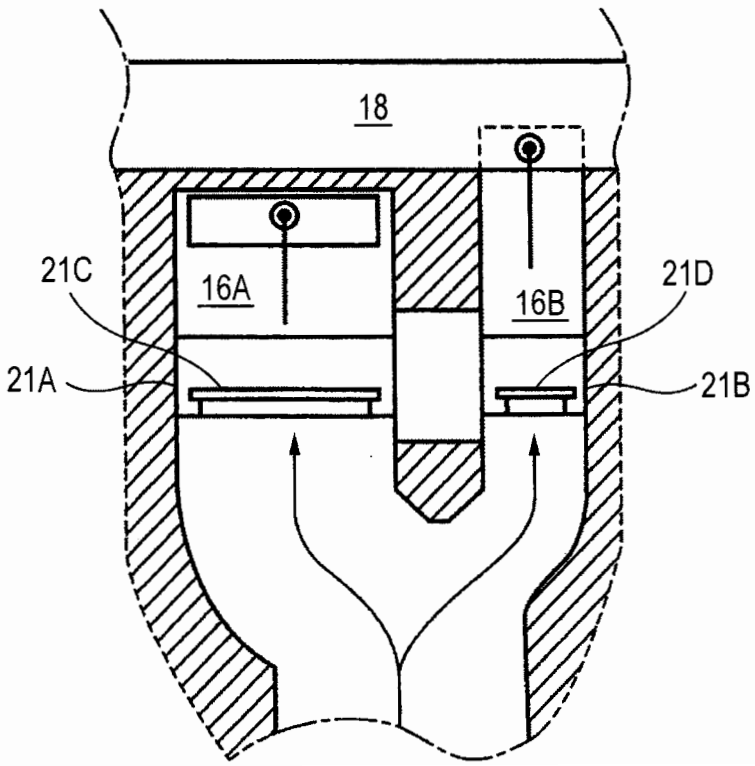

18
21C
16A
16B
21D
21A
21B

FIG. 9

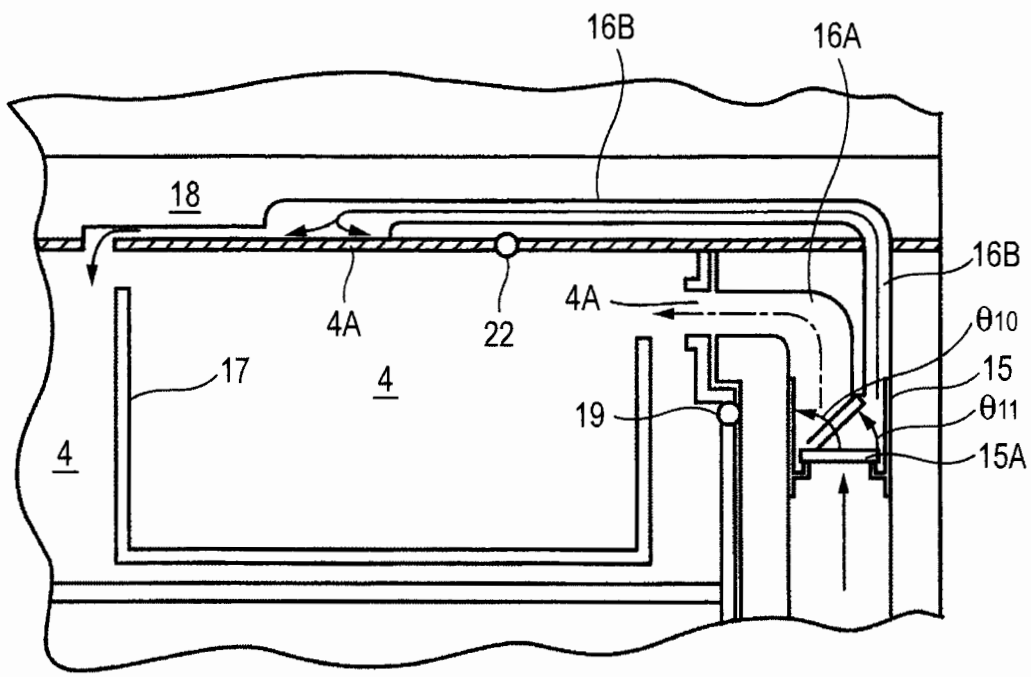
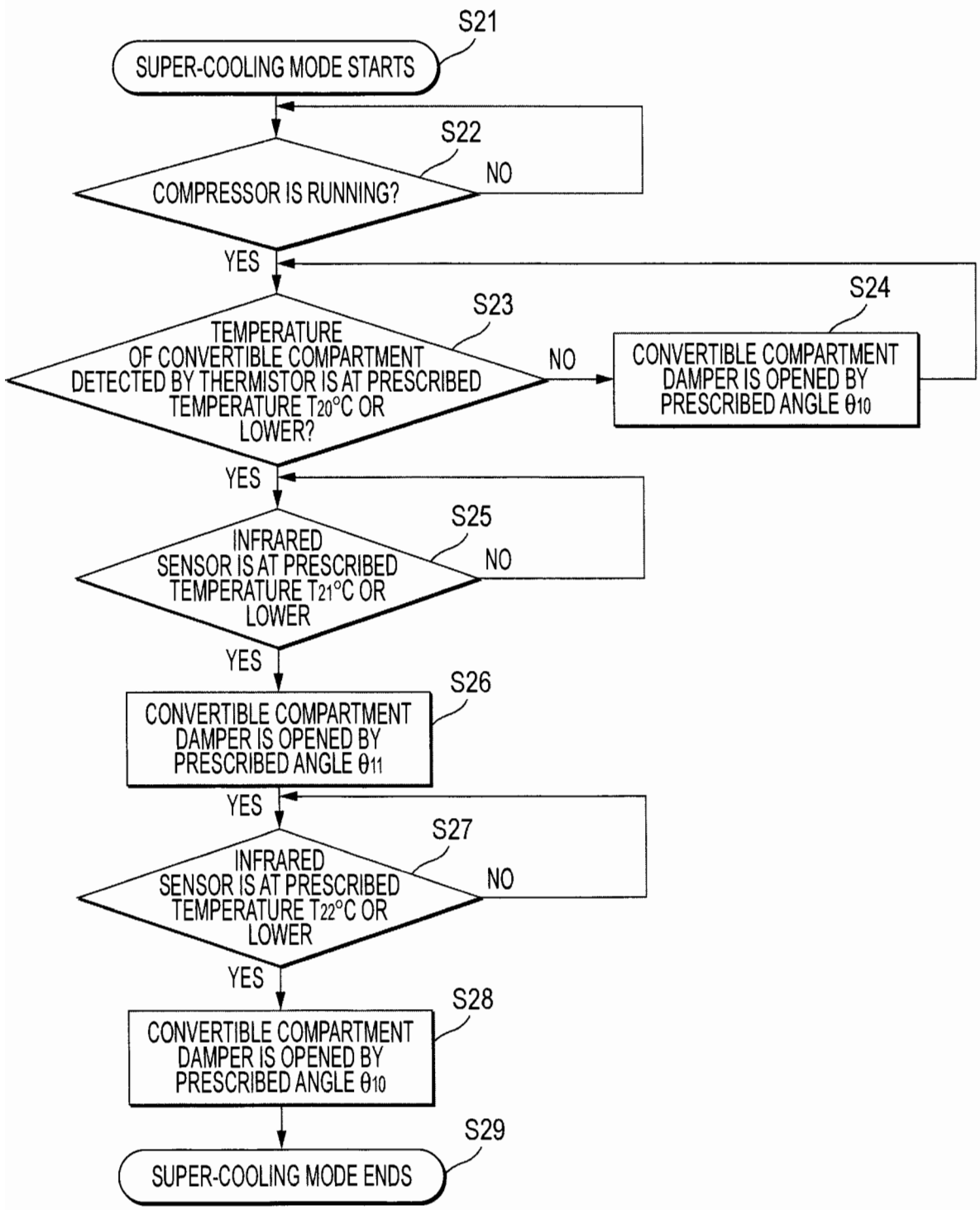


FIG. 10


S21
SUPER-COOLING MODE STARTS
S22
COMPRESSOR IS RUNNING?
NO
YES
S23
TEMPERATURE OF CONVERTIBLE COMPARTMENT DETECTED BY THERMISTOR IS AT PRESCRIBED TEMPERATURE T20°C OR LOWER?
NO
S24
CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ10
YES
S25
INFRARED SENSOR IS AT PRESCRIBED TEMPERATURE T21°C OR LOWER
NO
YES
S26
CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ11
YES
S27
INFRARED SENSOR IS AT PRESCRIBED TEMPERATURE T22°C OR LOWER
NO
YES
S28
CONVERTIBLE COMPARTMENT DAMPER IS OPENED BY PRESCRIBED ANGLE θ10
S29
SUPER-COOLING MODE ENDS