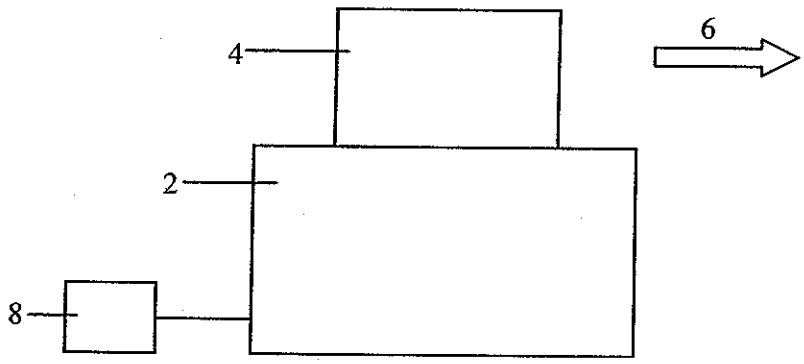


Figure 1

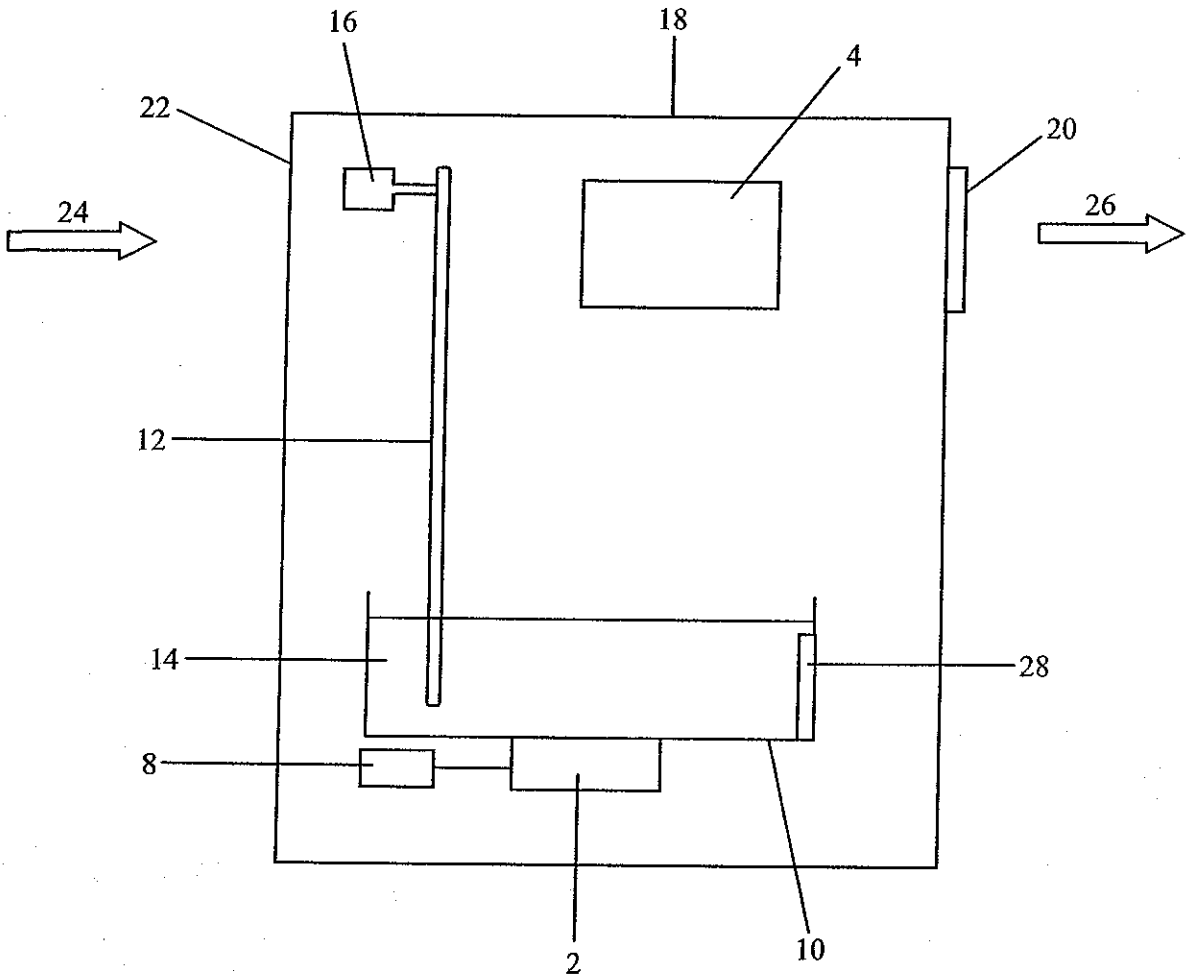


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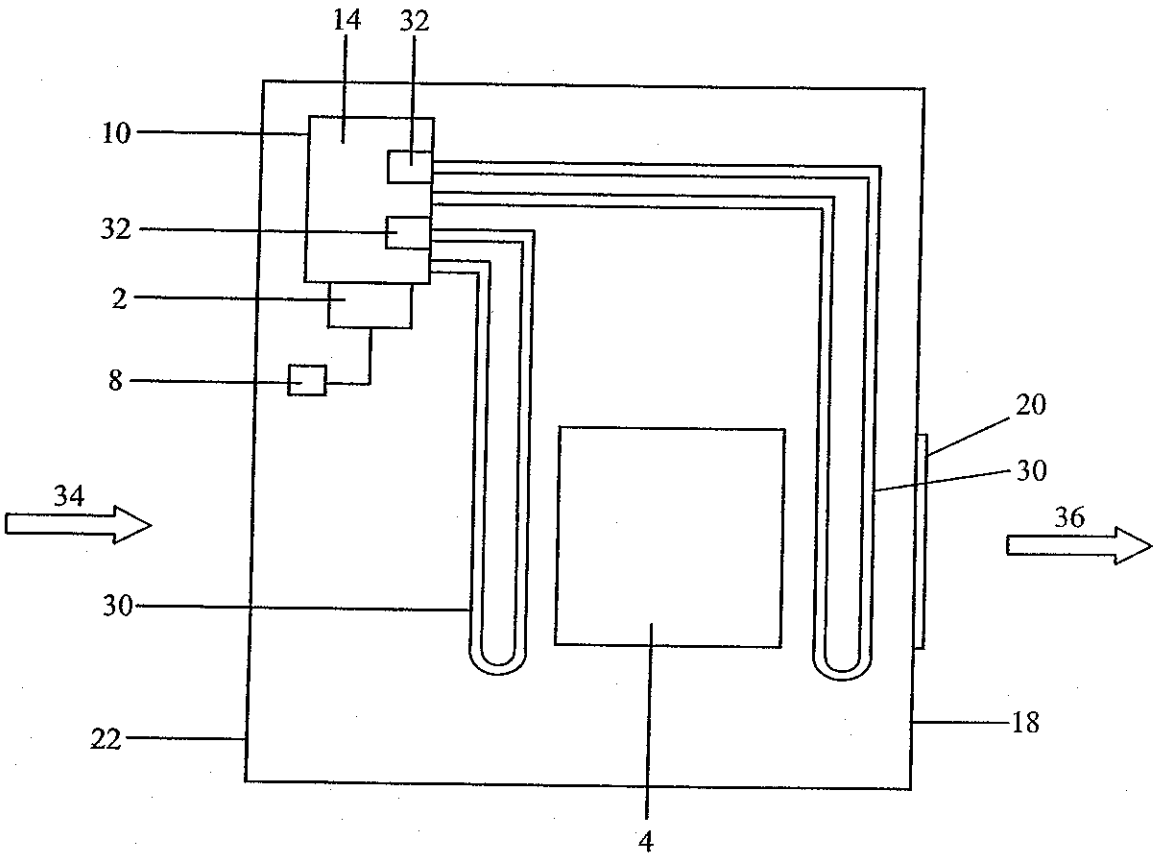


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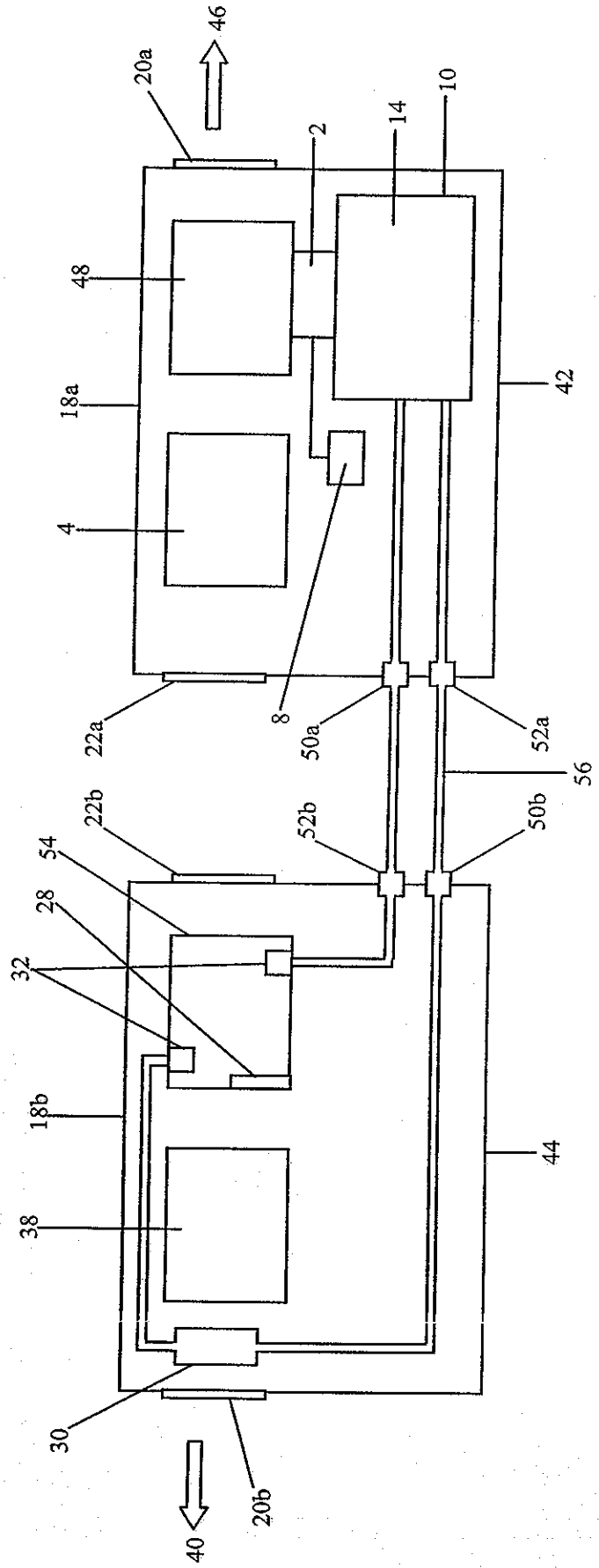

46
20a
2
14
10
48
18a
42
4
8
22a
50a
52a
56
22b
52b
50b
54
28
32
18b
44
38
30
40
20b

Figure 4

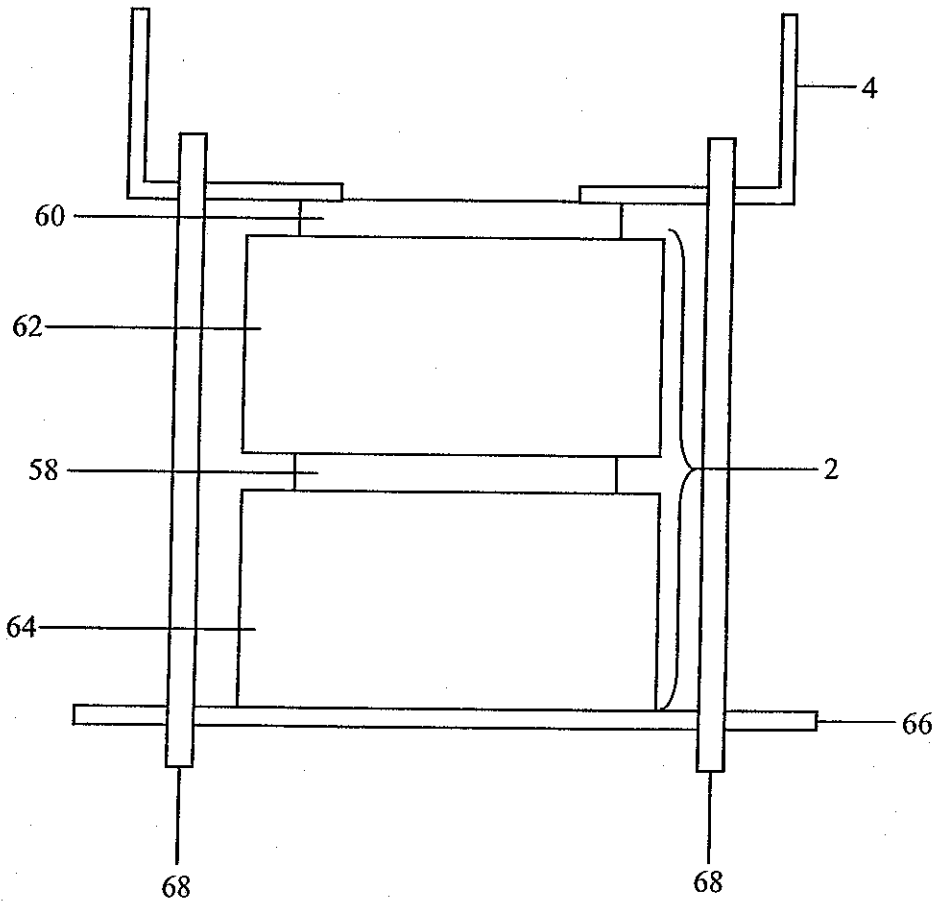


Figure 5

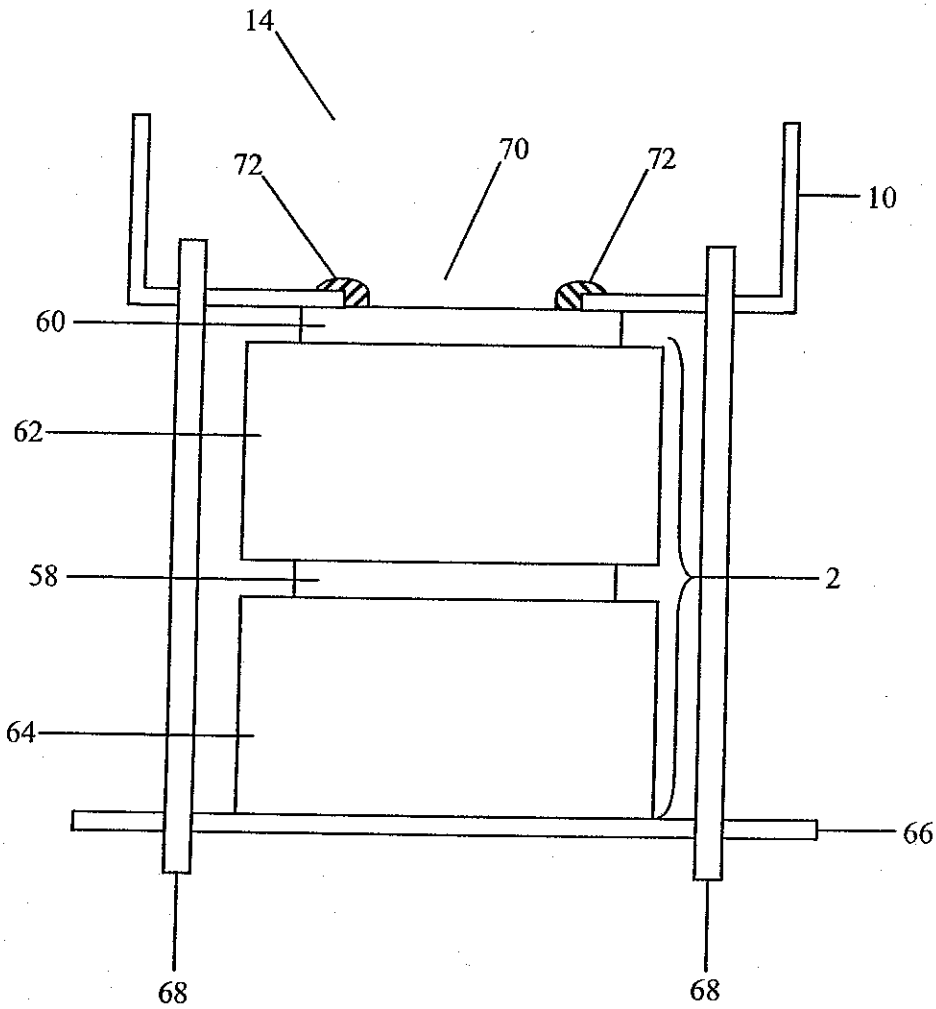


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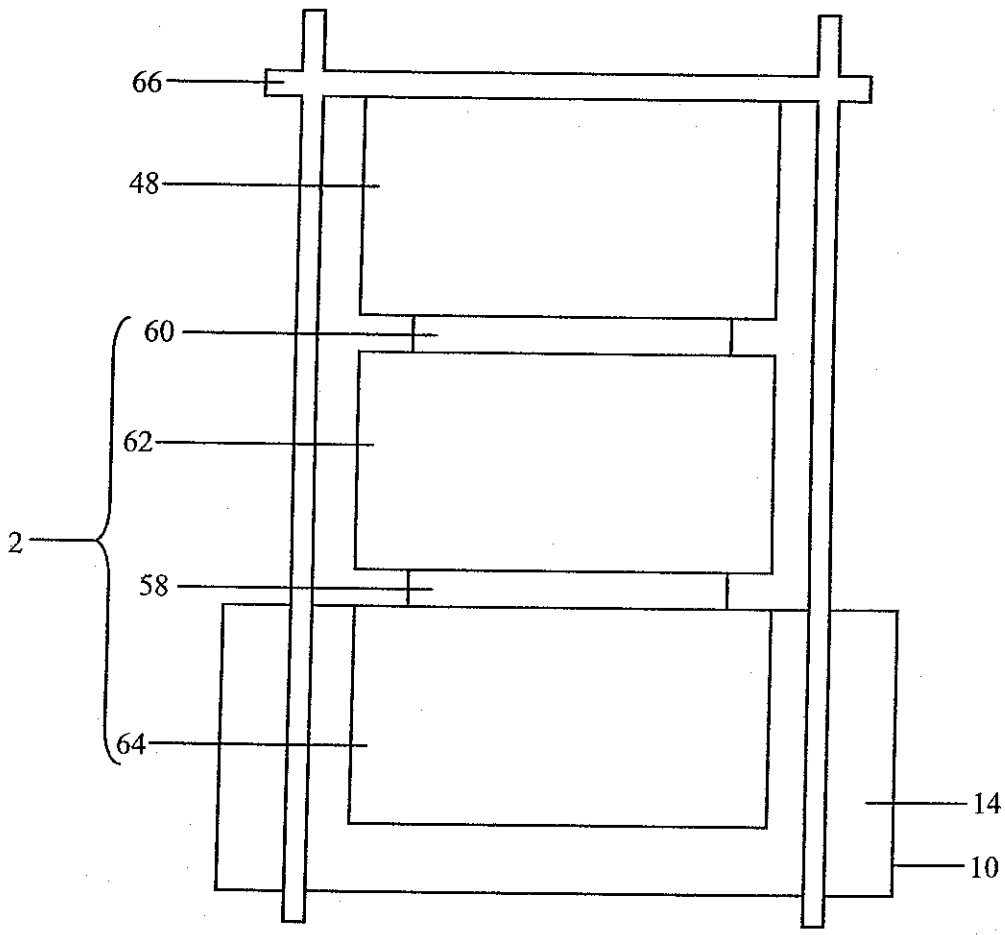


Figure 7

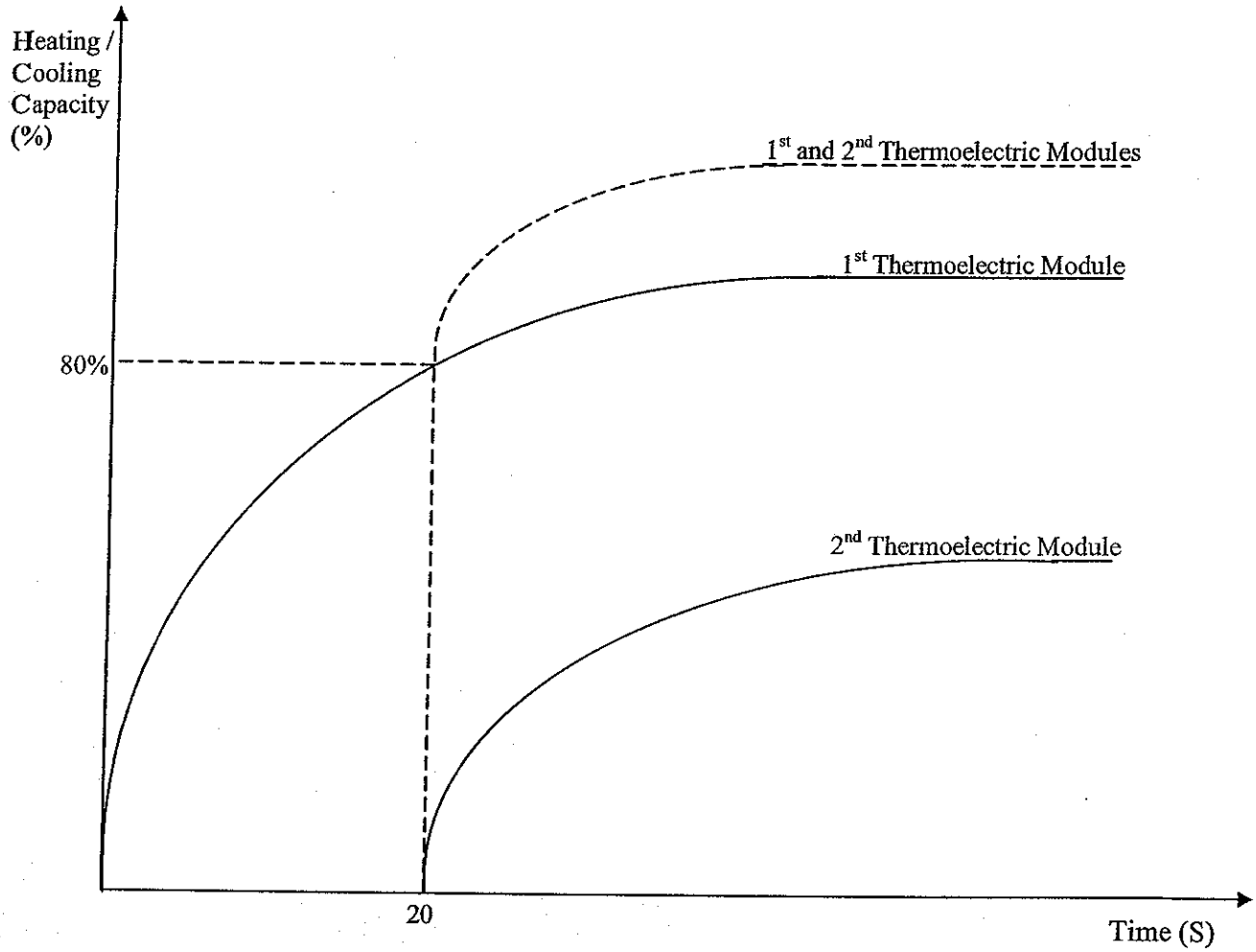

Heating / Cooling Capacity (%)
1st and 2nd Thermoelectric Modules
1st Thermoelectric Module
80%
2nd Thermoelectric Module
20
Time (S)

Figure 8

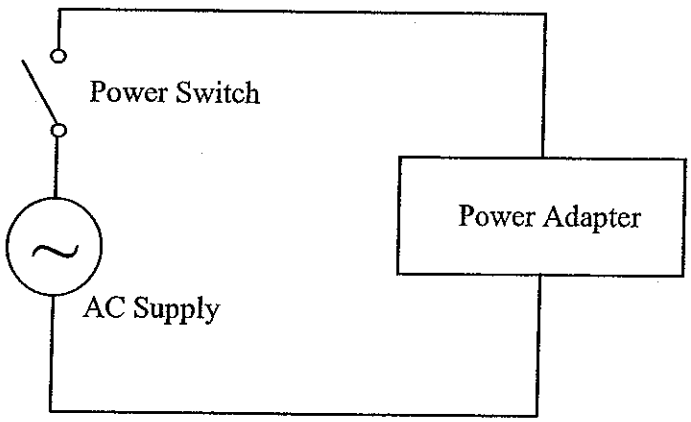


Figure 9

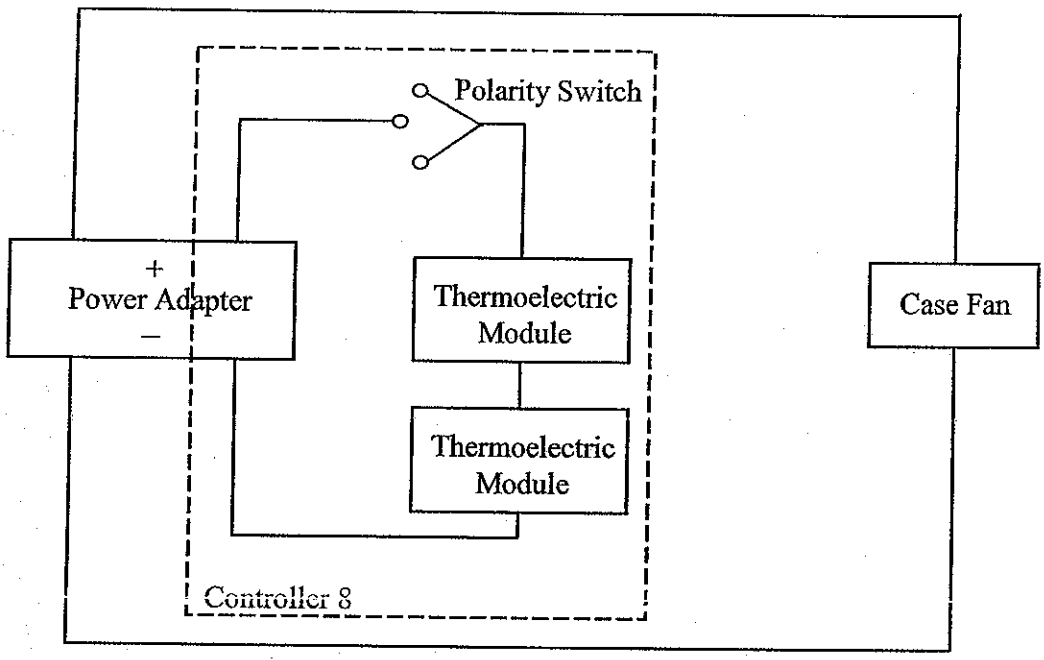


Figure 10

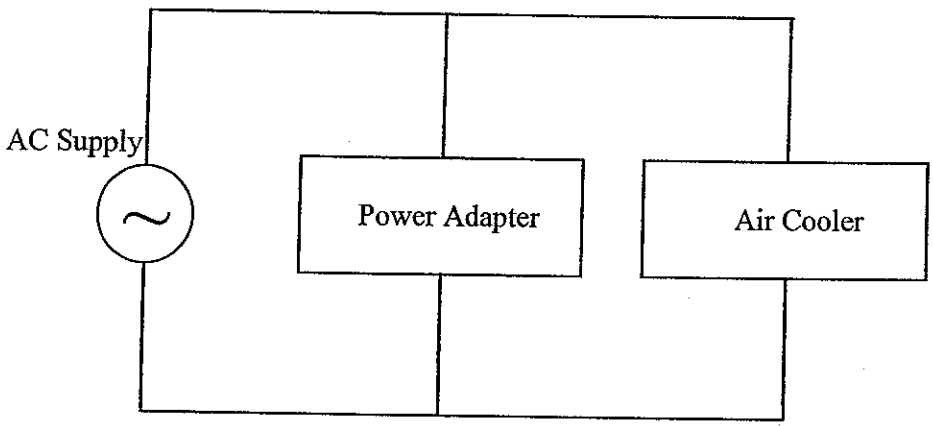


Figure 11

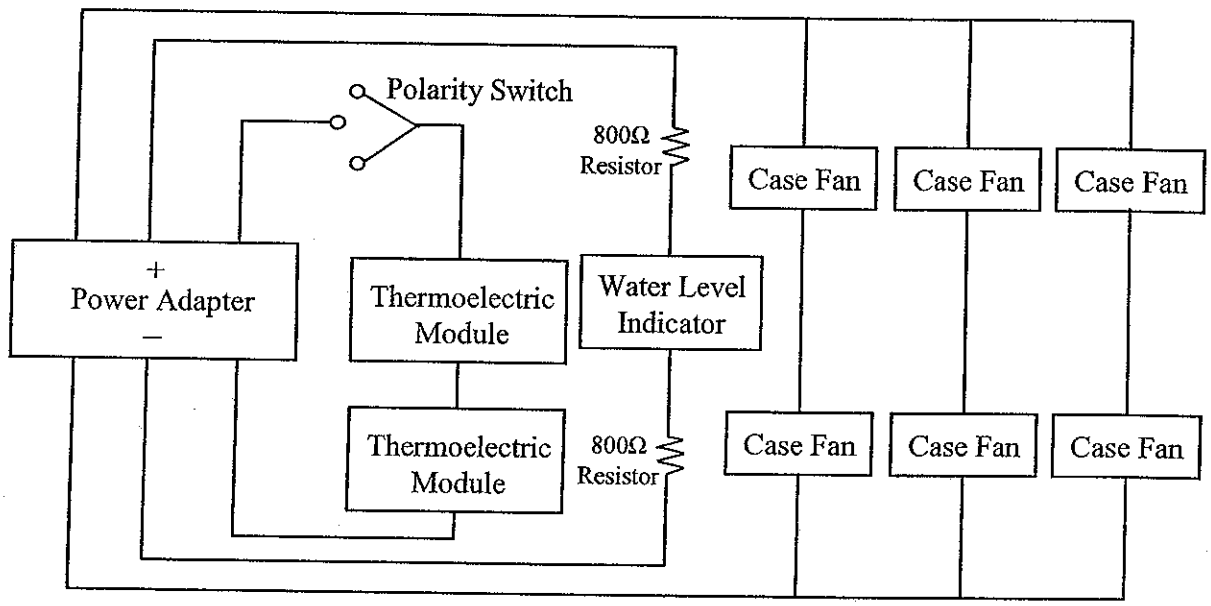

Polarity Switch
800Ω
Resistor
Case Fan
Case Fan
Case Fan
+
Power Adapter
–
Thermoelectric
Module
Water Level
Indicator
Thermoelectric
Module
800Ω
Resistor
Case Fan
Case Fan
Case Fan

Figure 12

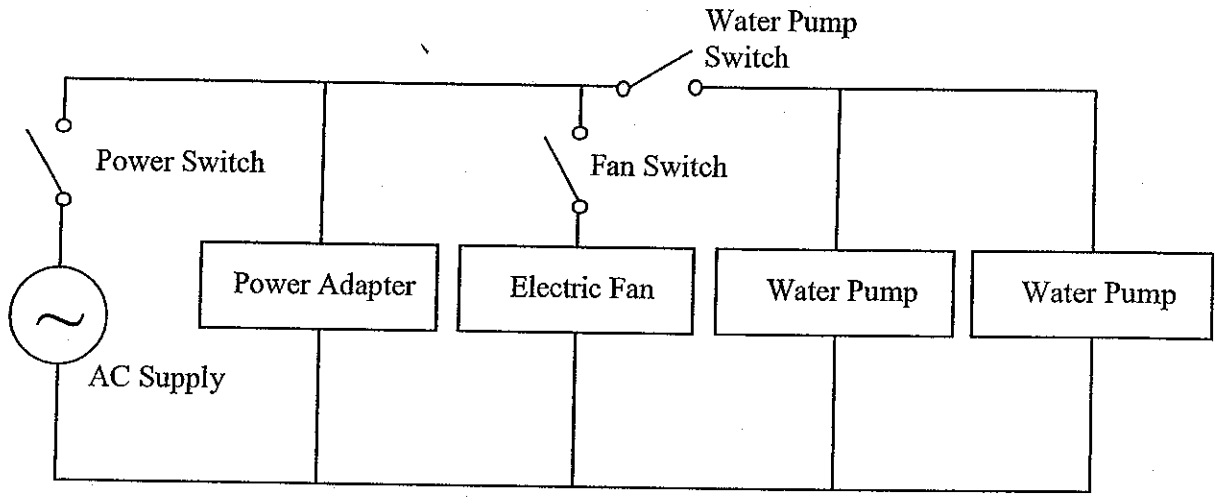

Water Pump
Switch
Power Switch
Fan Switch
Power Adapter
Electric Fan
Water Pump
Water Pump
AC Supply

Figure 13

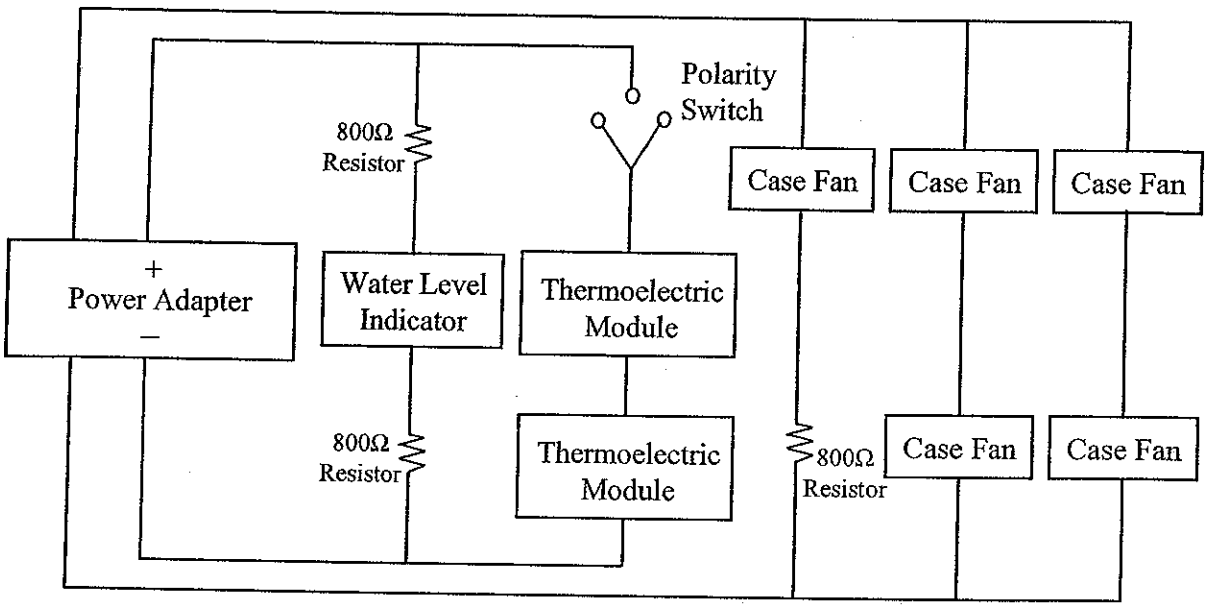

Polarity
Switch
800Ω
Resistor
Case Fan
Case Fan
Case Fan
+
Power Adapter
–
Water Level
Indicator
Thermoelectric
Module
800Ω
Resistor
Thermoelectric
Module
800Ω
Resistor
Case Fan
Case Fan

Figure 14

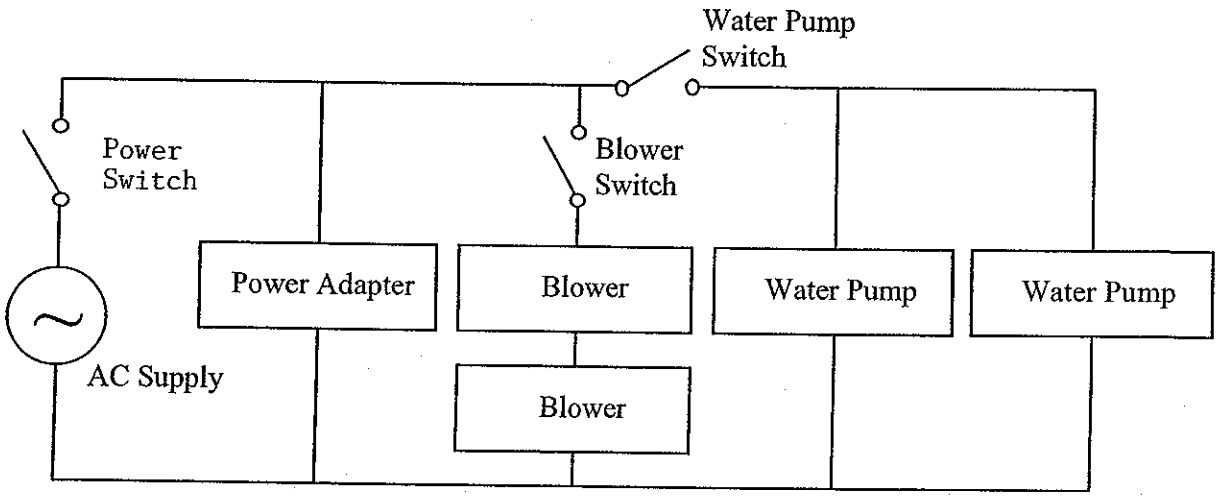

Water Pump
Switch
Power
Switch
Blower
Switch
Power Adapter
Blower
Water Pump
Water Pump
AC Supply
Blower

Figure 15

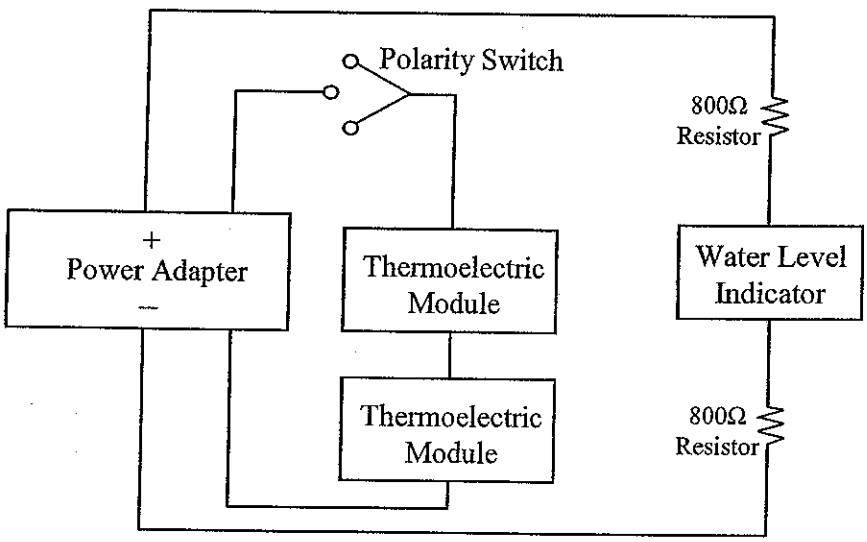

Polarity Switch
800Ω
Resistor
+
Power Adapter
–
Thermoelectric
Module
Water Level
Indicator
Thermoelectric
Module
800Ω
Resistor

Figure 16

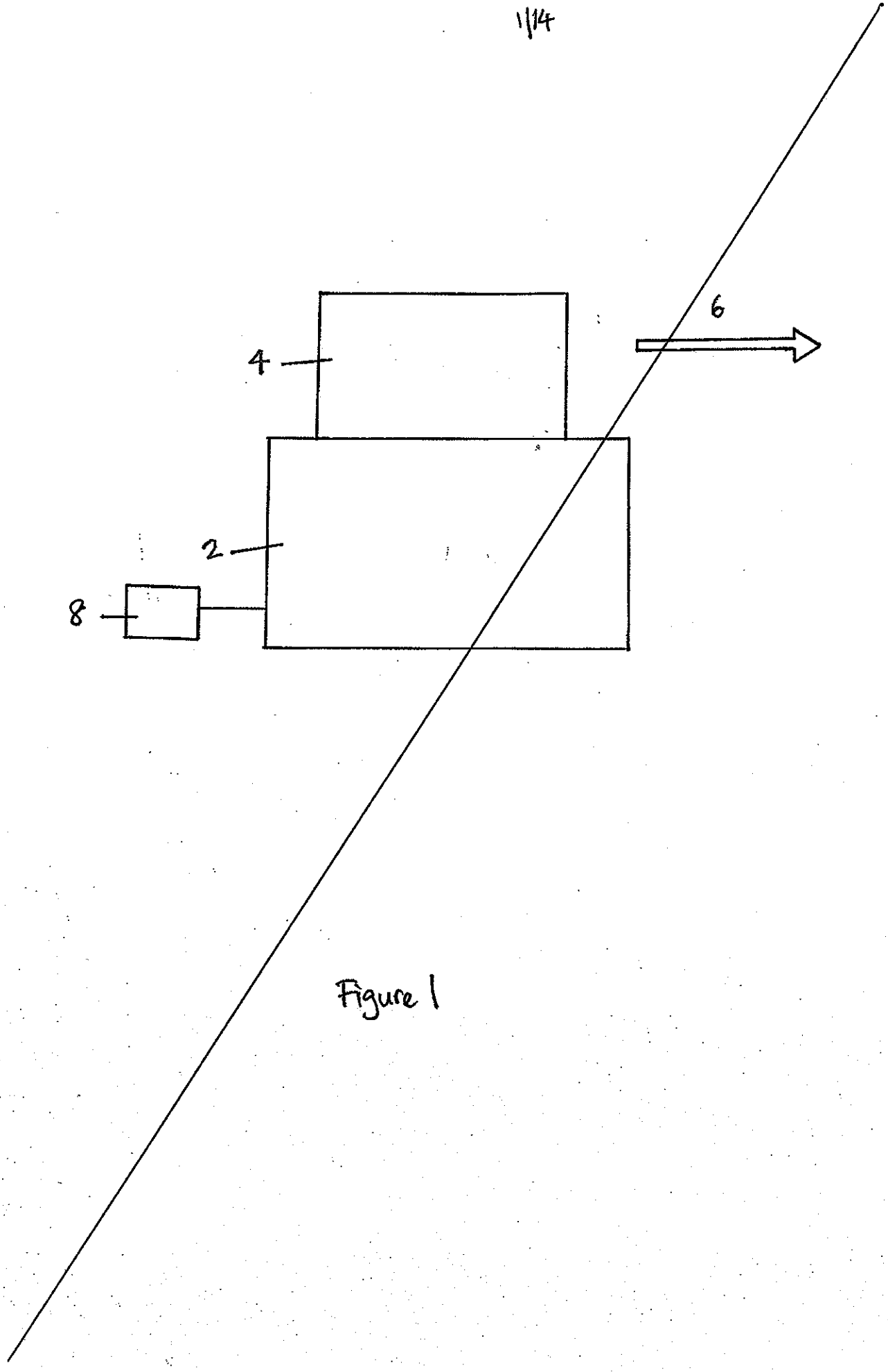


Figure 1

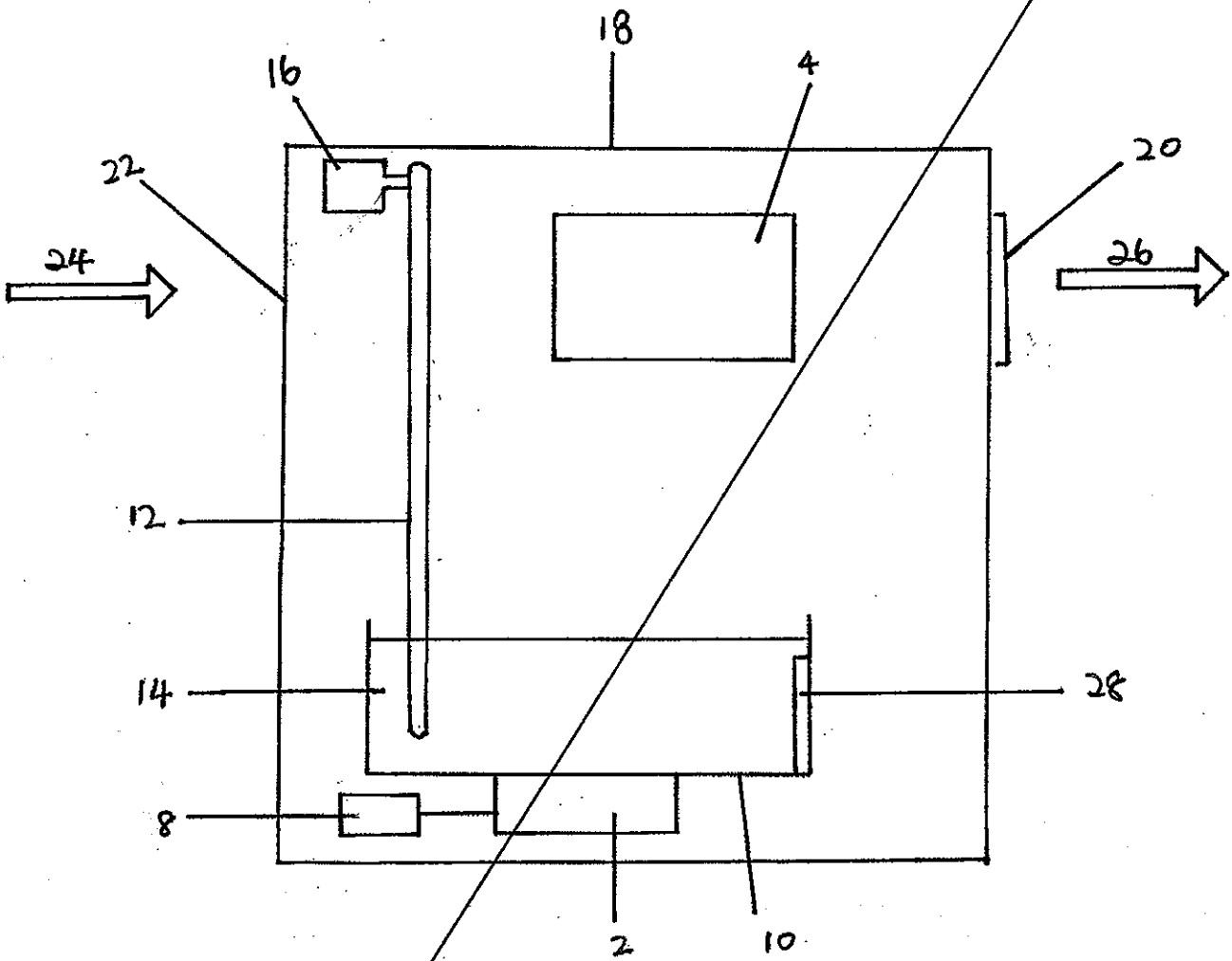


Figure 2

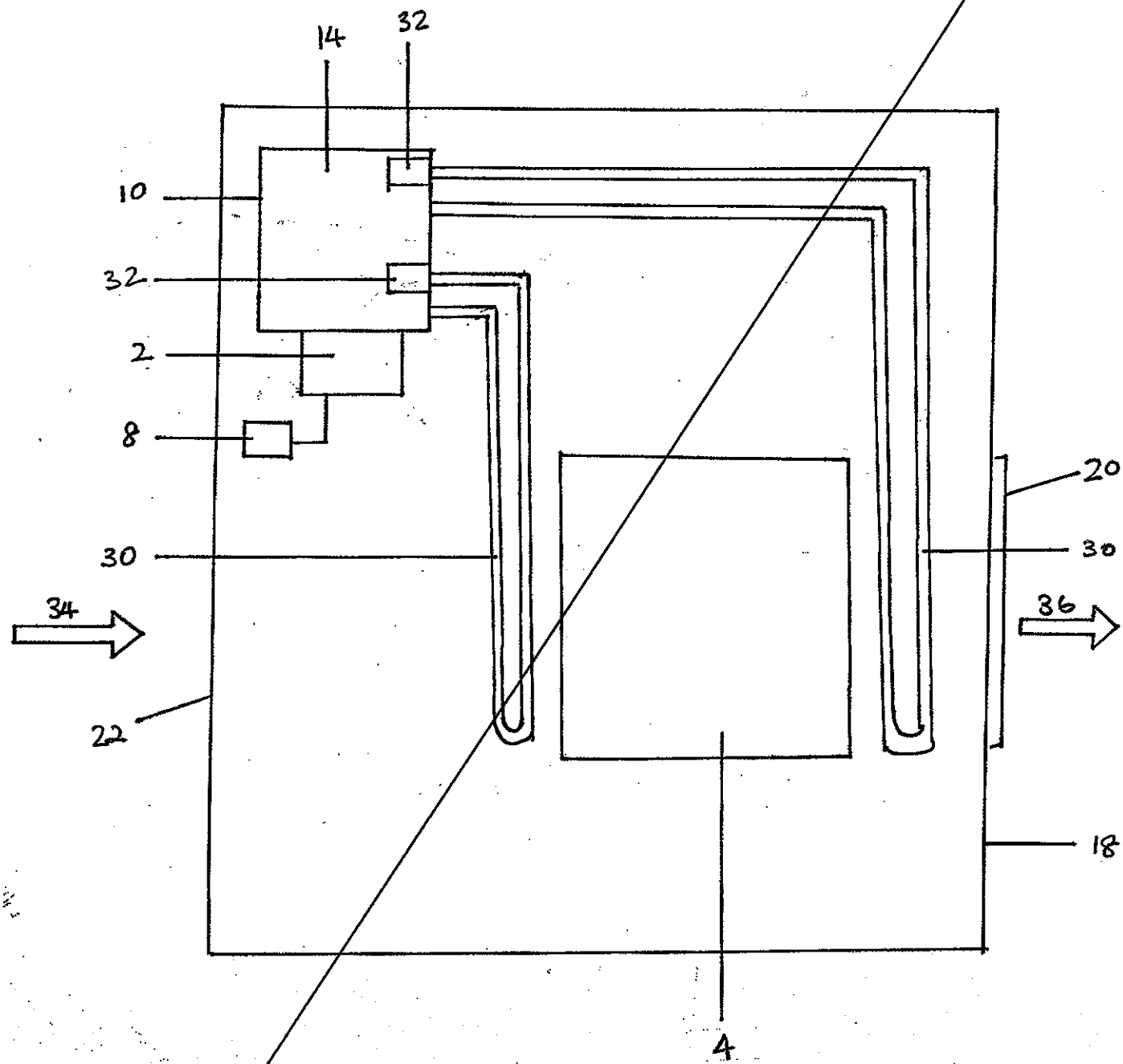


Figure 3

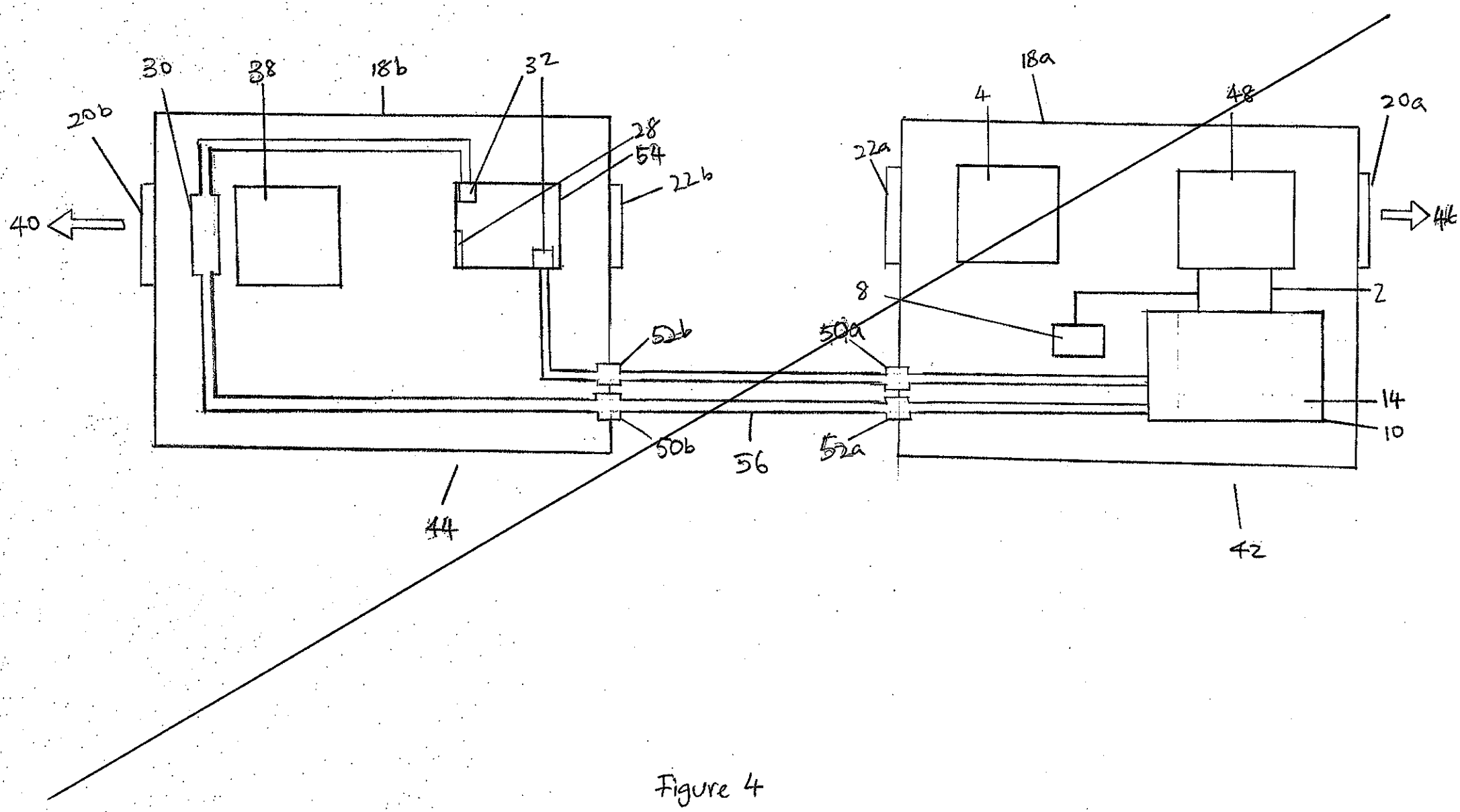

30
38
18b
32
20b
28
54
22b
40
18a
4
48
20a
22a
44b
8
2
50a
52b
14
10
50b
56
52a
44
42

Figure 4

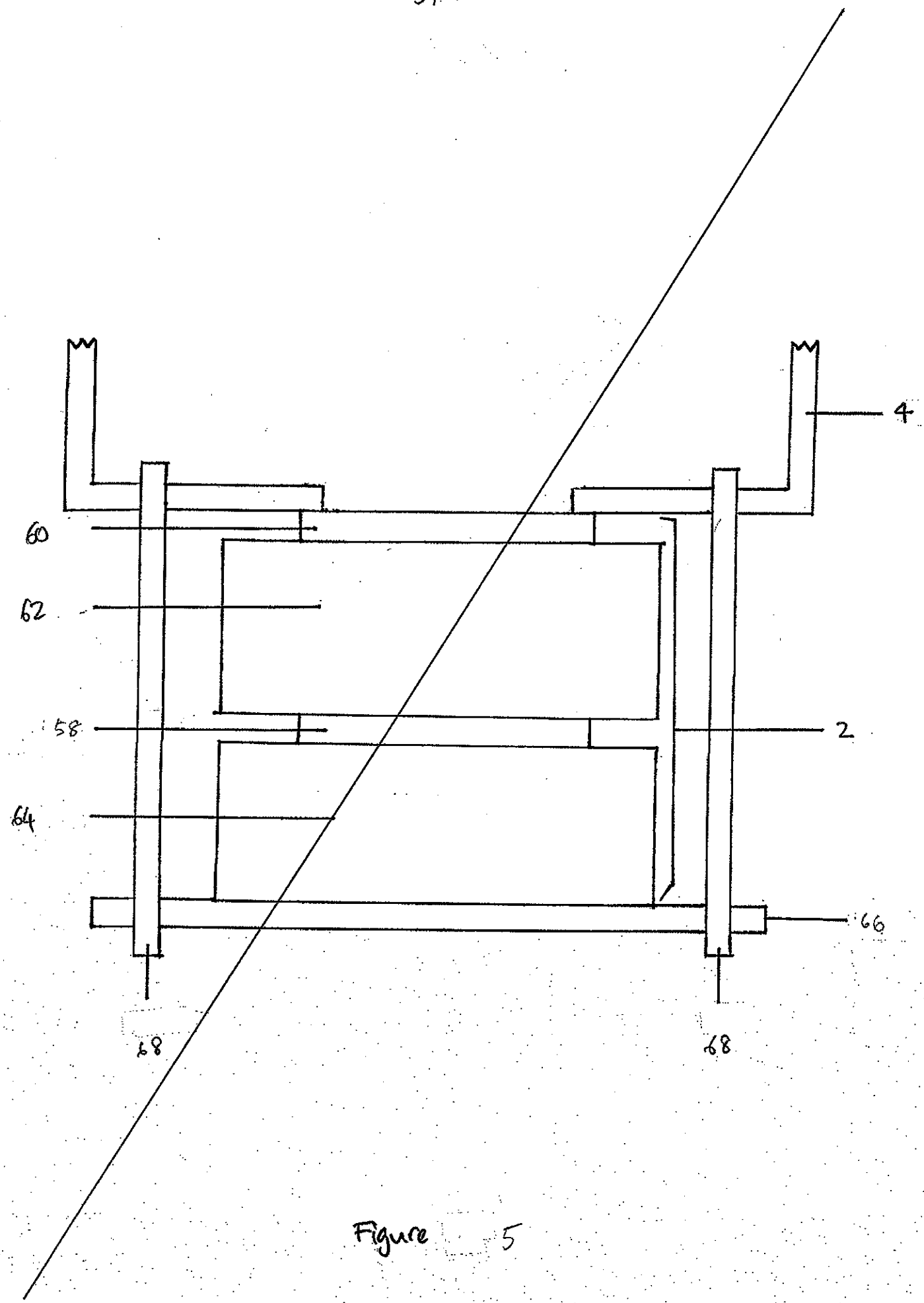


Figure 5

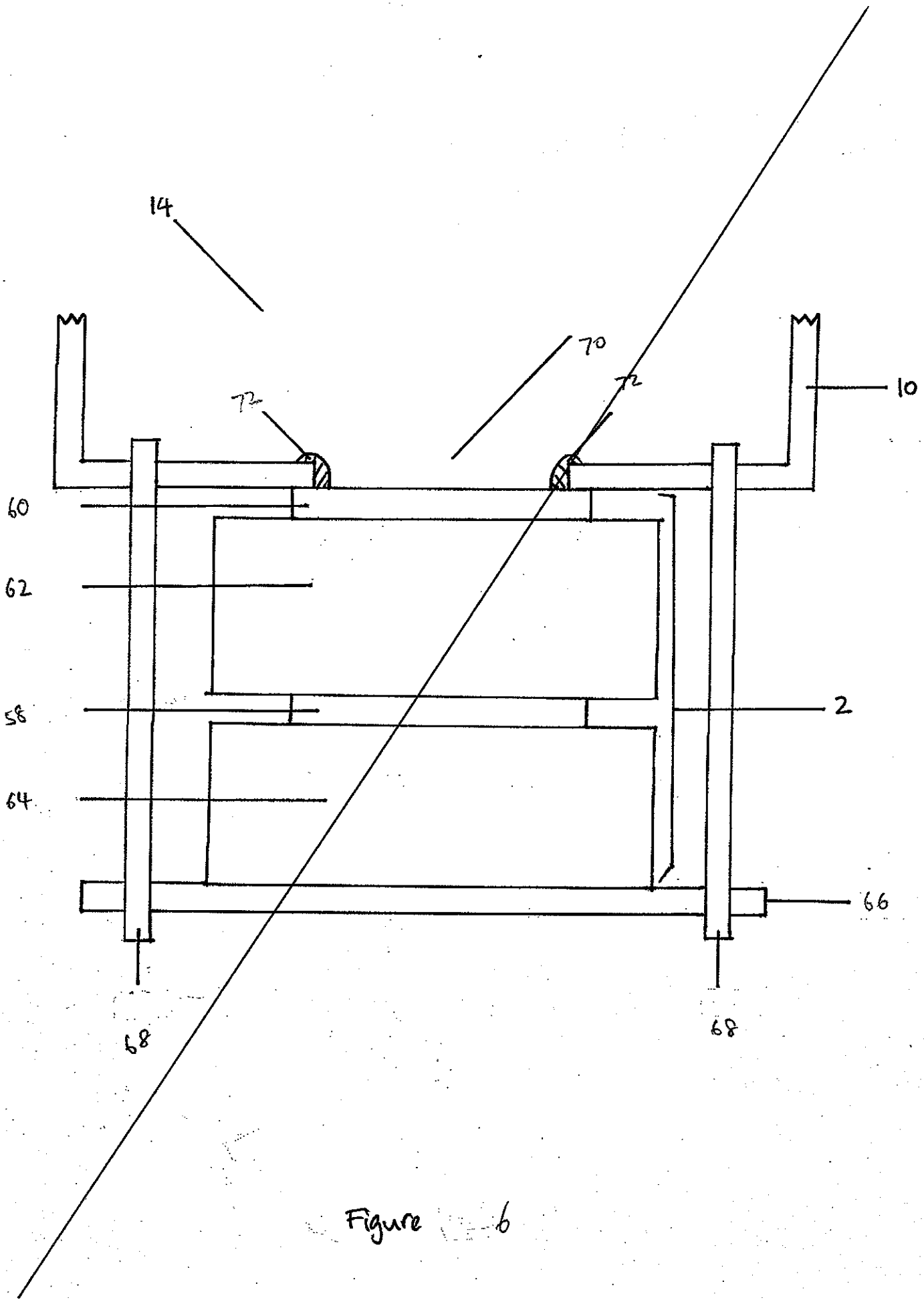


Figure 6

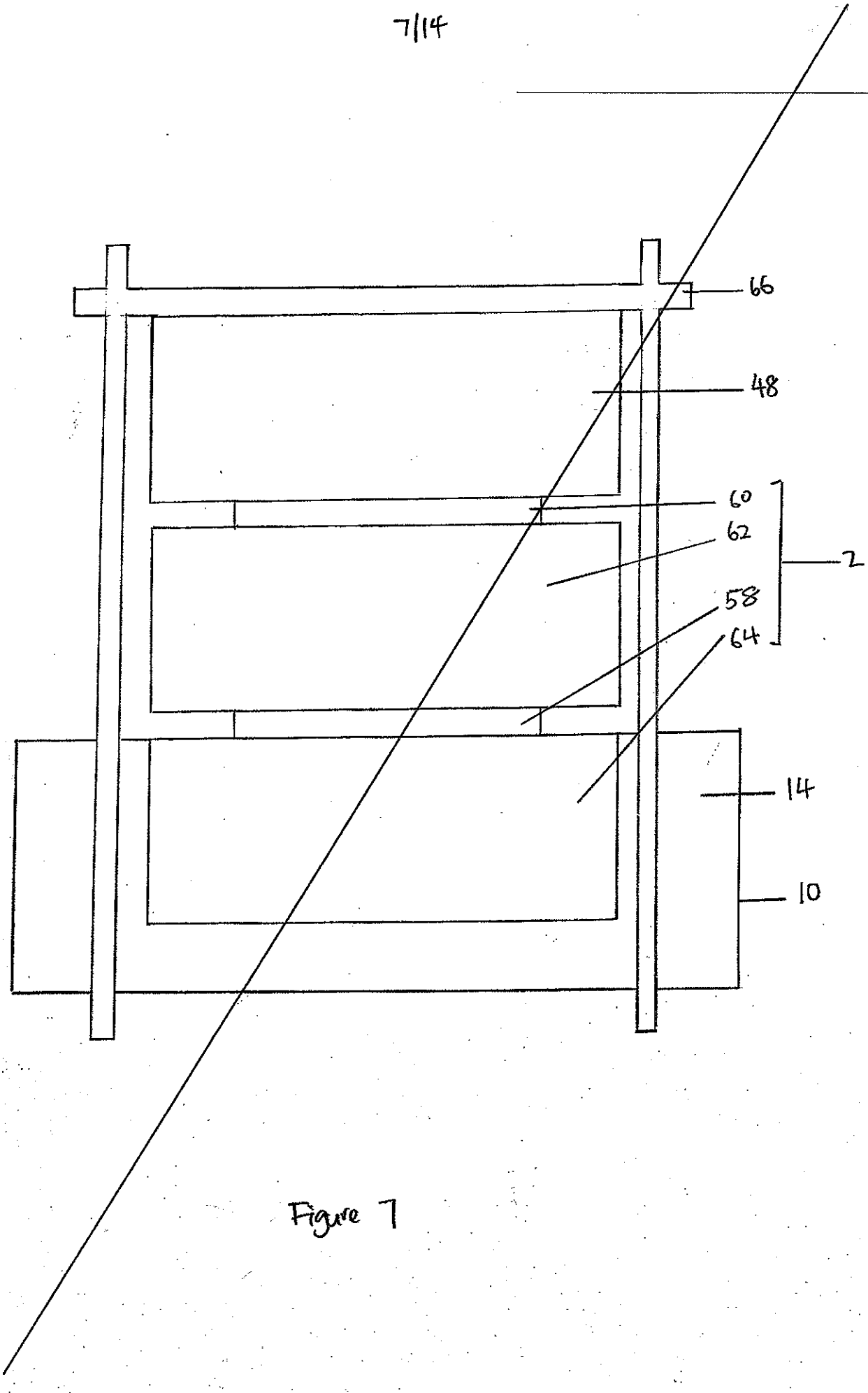


Figure 7

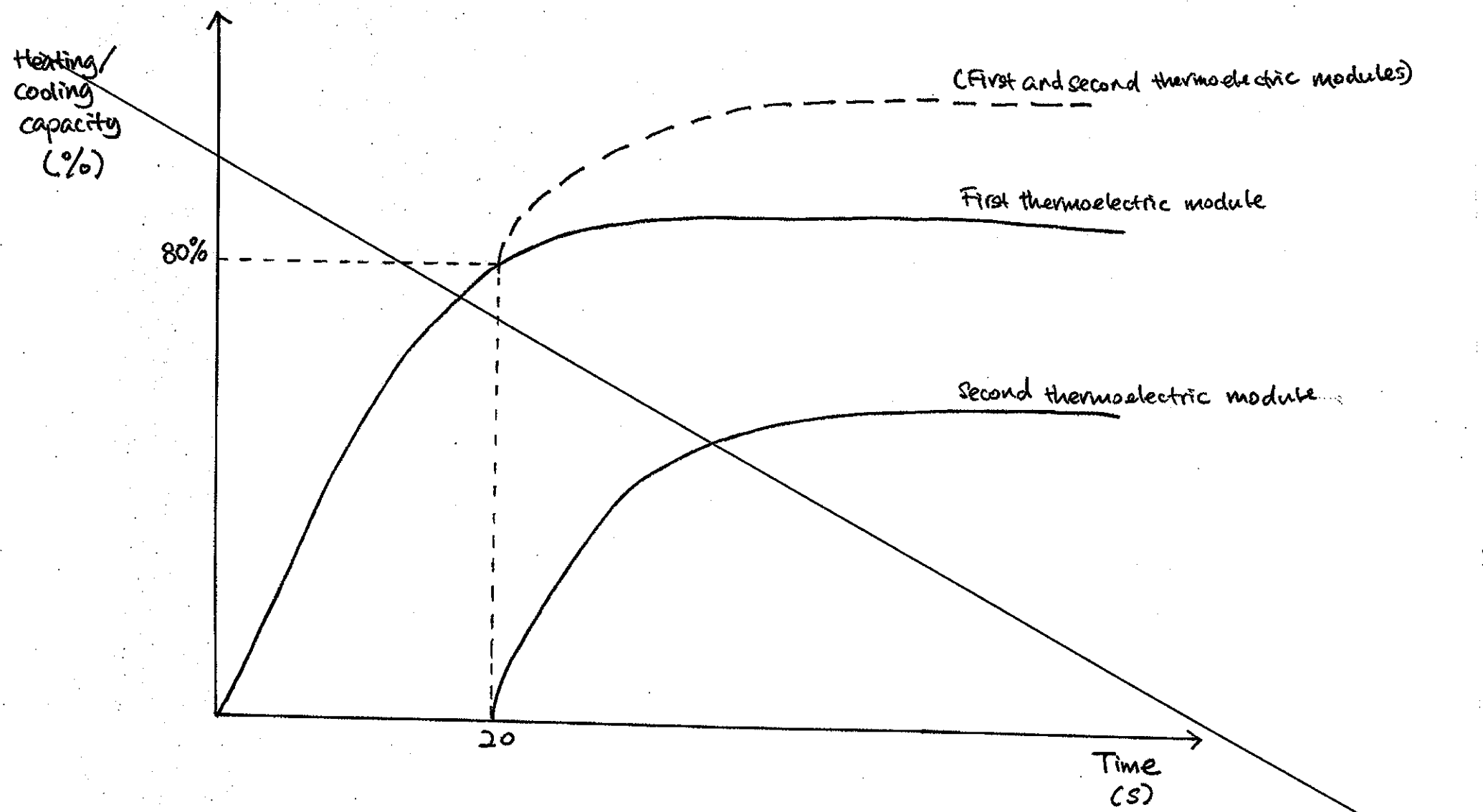

Heating/
cooling
capacity
(%)
(First and second thermoelectric modules)
First thermoelectric module
80%
Second thermoelectric module
20
Time
(s)

Figure 8

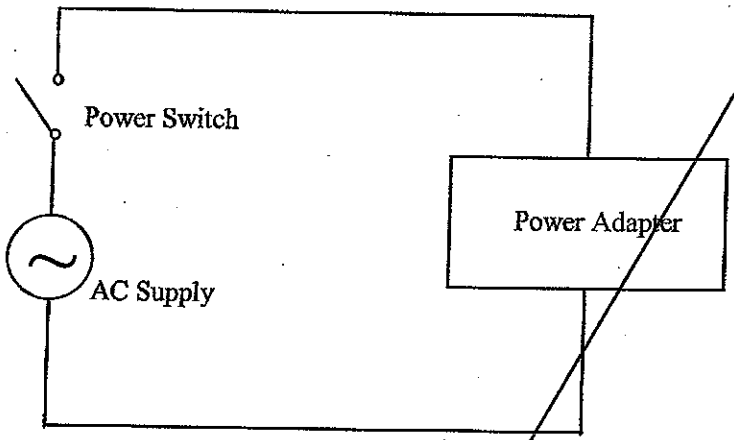


Figure 9

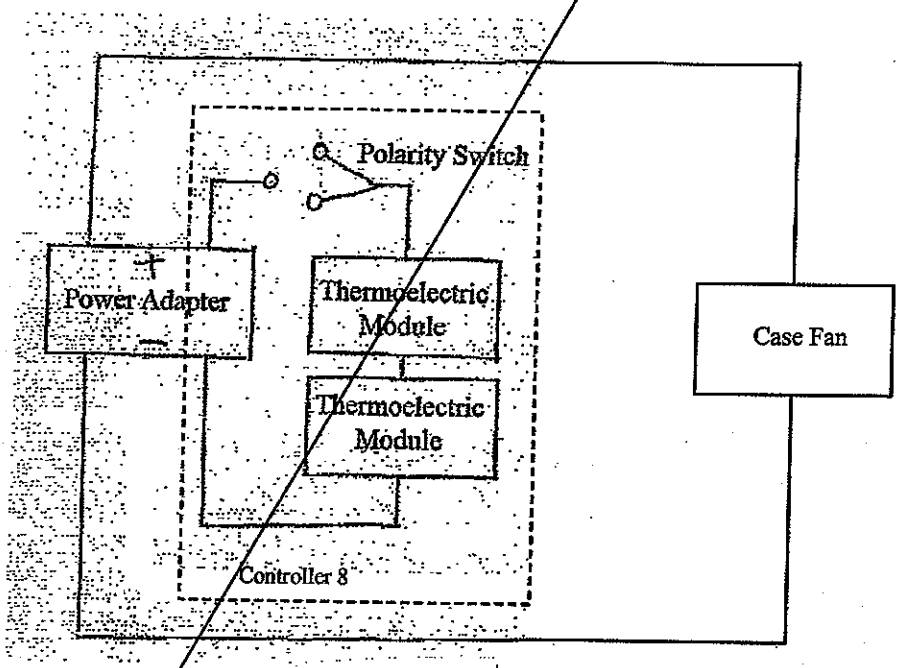


Figure 10

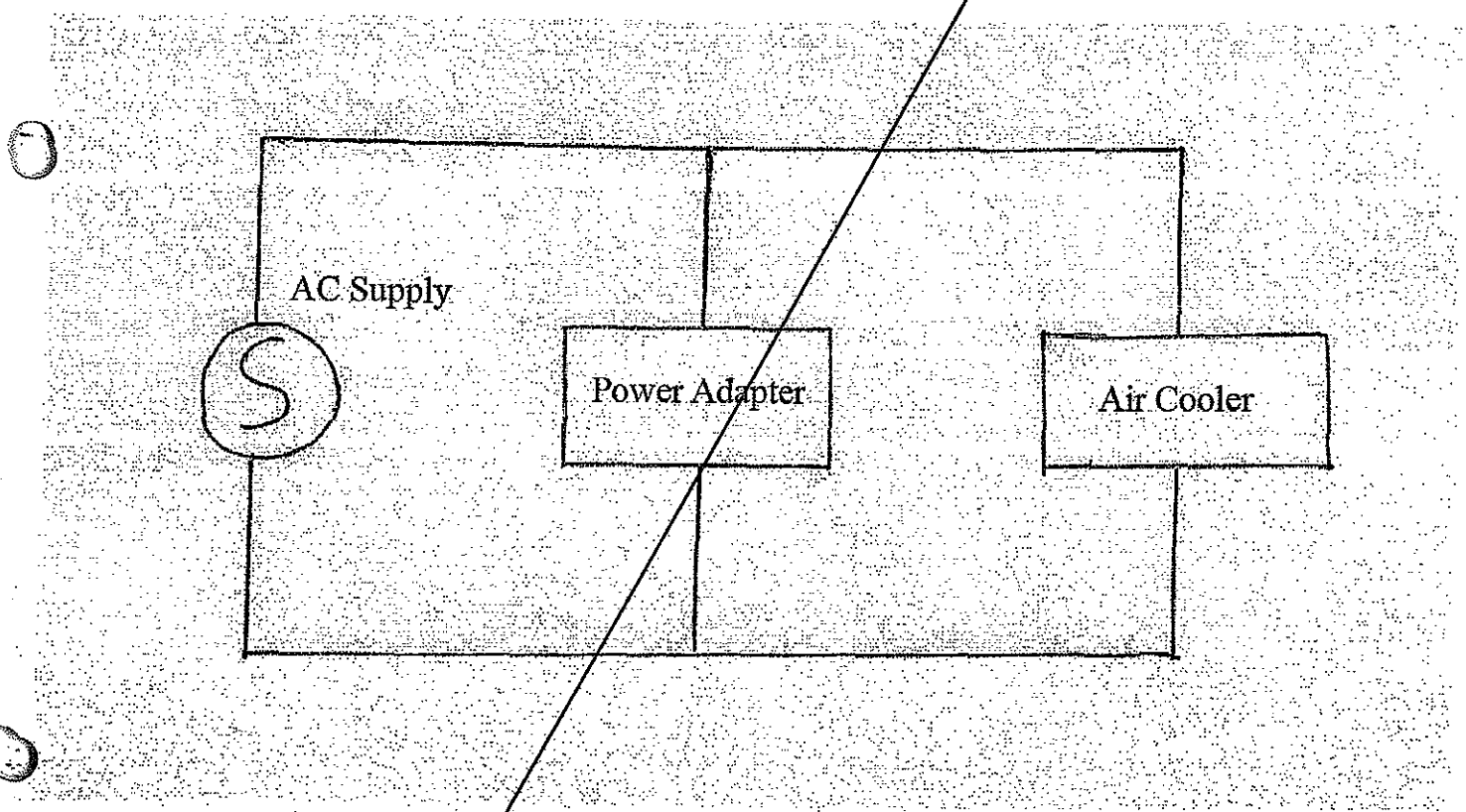


Figure 11

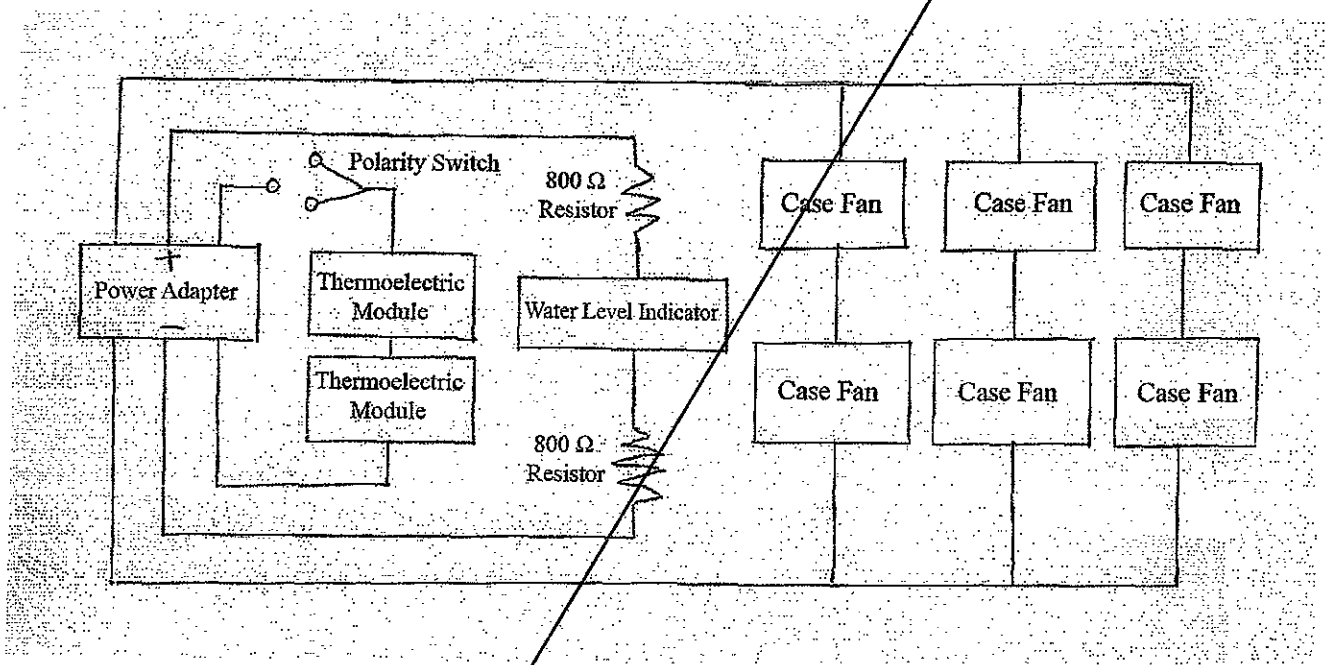

Polarity Switch
800 Ω
Resistor
Case Fan
Case Fan
Case Fan
+
Power Adapter
−
Thermoelectric
Module
Water Level Indicator
Thermoelectric
Module
Case Fan
Case Fan
Case Fan
800 Ω
Resistor

FIGURE 12

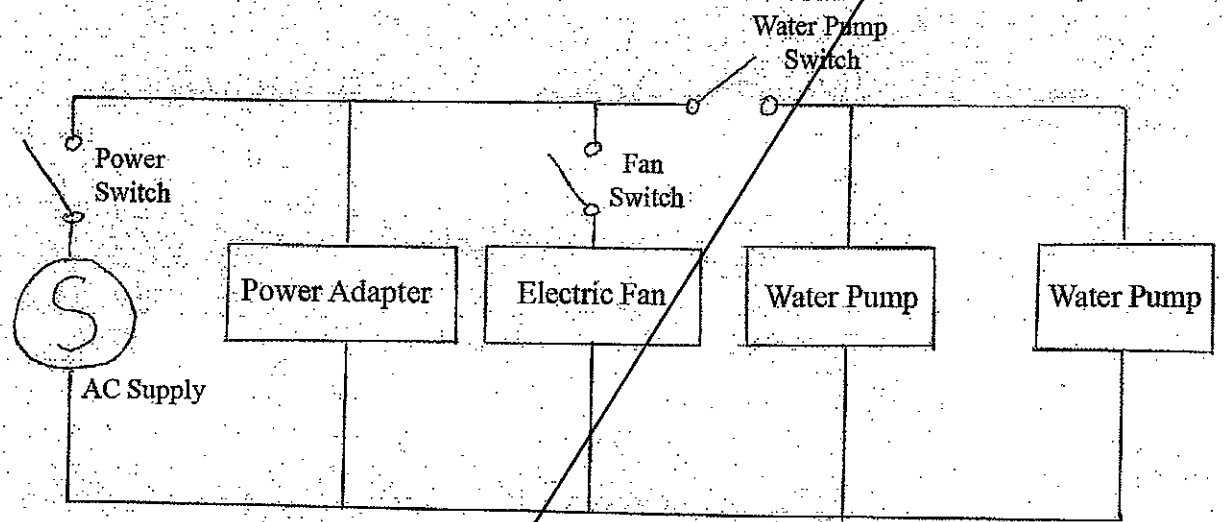

Water Pump
Switch
Power
Switch
Fan
Switch
S
Power Adapter
Electric Fan
Water Pump
Water Pump
AC Supply

Figure 13

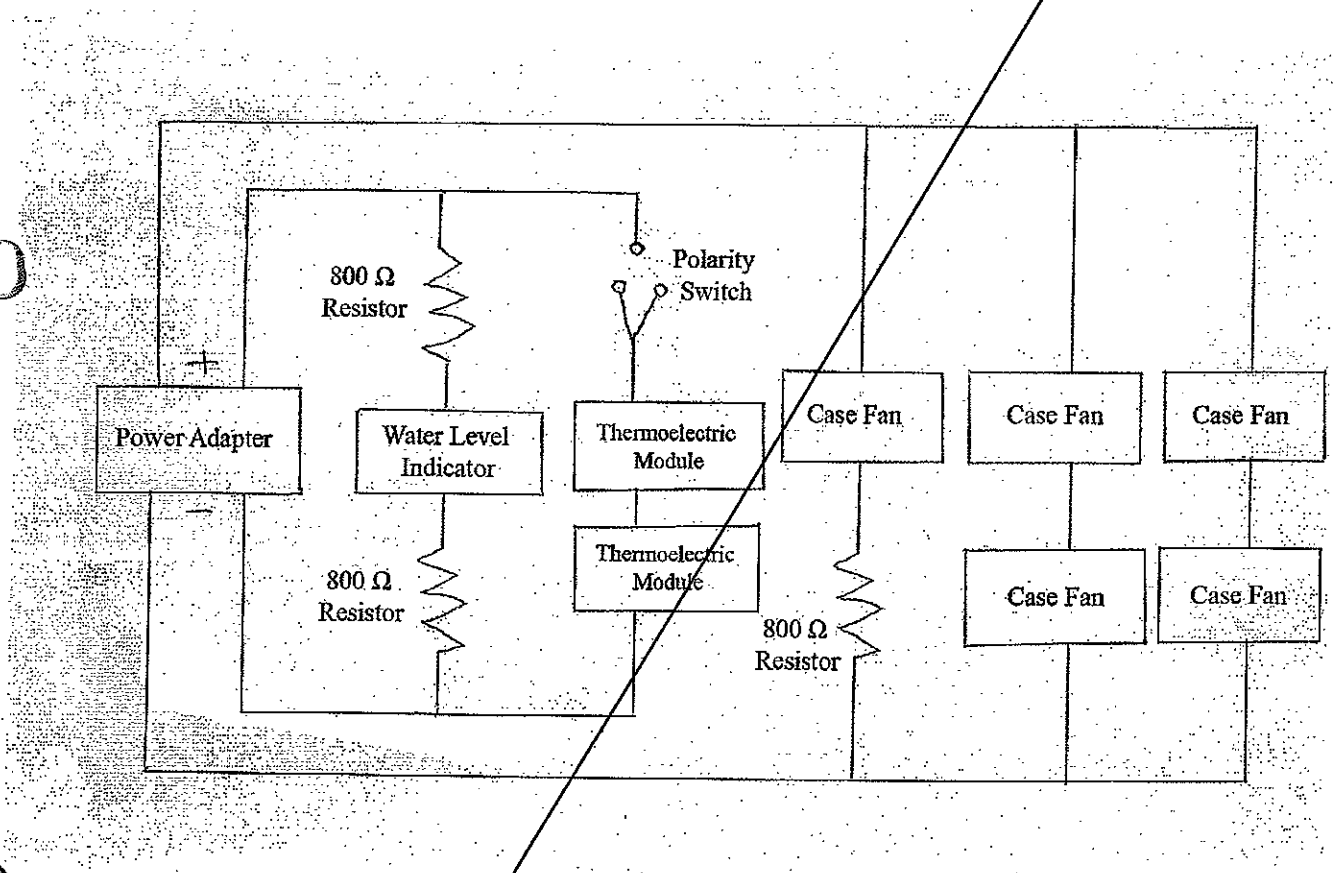

800 Ω
Resistor
Polarity
Switch
+
Power Adapter
−
Water Level
Indicator
Thermoelectric
Module
Case Fan
Case Fan
Case Fan
800 Ω
Resistor
Thermoelectric
Module
Case Fan
Case Fan
800 Ω
Resistor

Figure 14

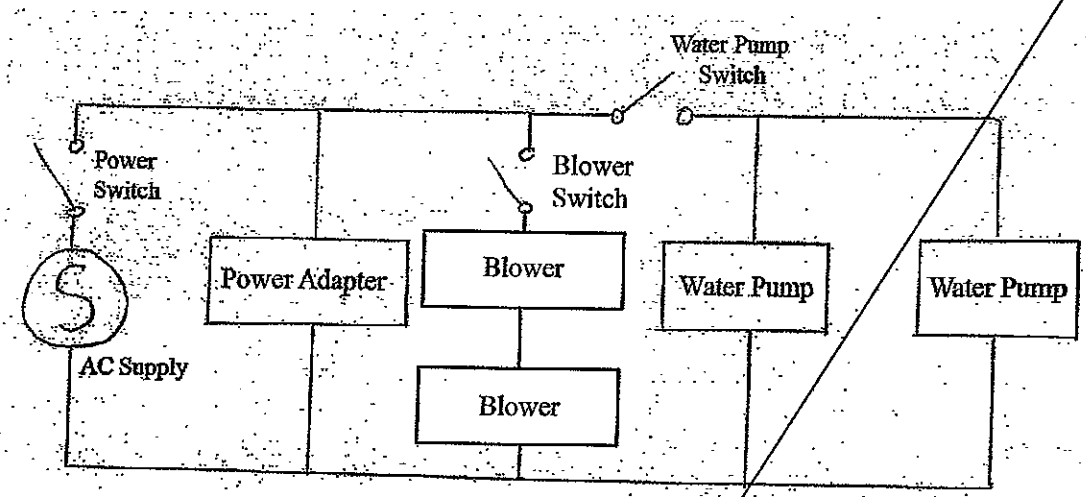


Figure 15

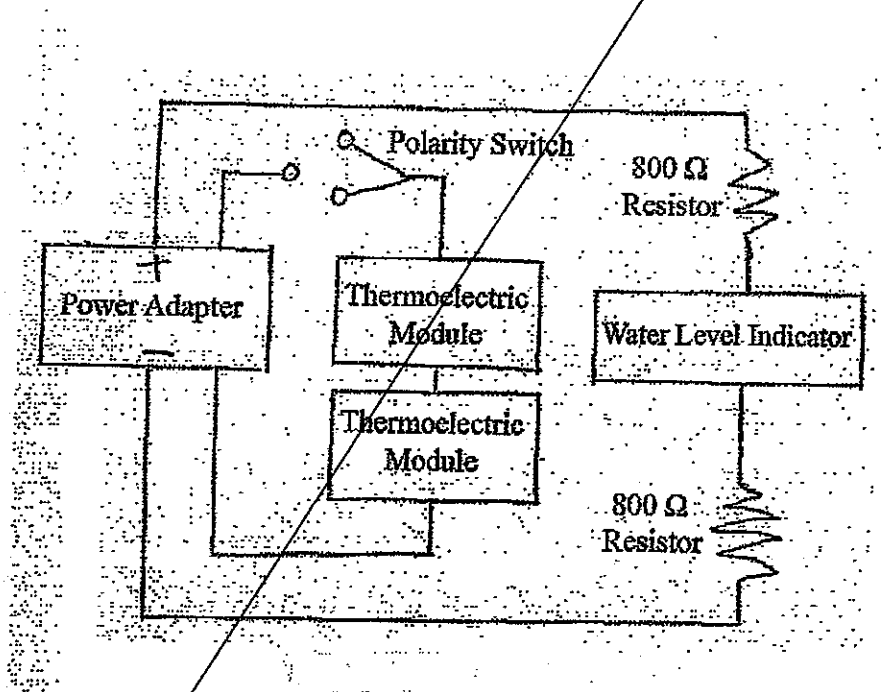


Figure 16