CLAIMS

1. A fire-fighting device of an electrical cabinet, comprising:

an electrical cabinet body (1) and a smoke and temperature combination detector (3) provided in the electrical cabinet body (1);

a nozzle (4) provided in the electrical cabinet body (1); and

an agent tank (5) in communication with the nozzle (4) through a pipeline for storing an agent configured to extinguish fire after being sprayed,

wherein the fire-fighting device of an electrical cabinet further comprises a flame detector (2) provided in the electrical cabinet body (1), wherein the smoke and temperature combination detector (3) and the flame detector (2) are both provided at a top of the electrical cabinet body (1),

wherein the fire-fighting device of an electrical cabinet further comprises a controller and an alarm, wherein a signal output end of the smoke and temperature combination detector (3) and a signal output end of the flame detector (2) are both communicated to a signal input end of the controller, and a signal output end of the controller is communicated to a signal input end of the alarm; and

the controller is configured to control the nozzle (4) to spray the agent and control the alarm to start in a case that smoke concentration detected by the smoke and temperature combination detector (3) reaches a first set value, internal temperature of the electrical cabinet body (1) reaches a second set value, and a flame state detected by the flame detector (2) reaches a set state.

2. The fire-fighting device of the electrical cabinet according to claim 1, wherein a first column of nozzles and a second column of nozzles are provided in the electrical cabinet body (1), and the first column of nozzles and the second column of nozzles each comprise a plurality of nozzles (4) arranged from top to bottom.

3. The fire-fighting device of the electrical cabinet according to claim 2, wherein

an uppermost side nozzle (4) of the first column of the nozzles and an uppermost side nozzle (4) of the second column of the nozzles are located at the top of the electrical cabinet body (1); and

remaining nozzles of the first column of the nozzles and remaining nozzles of the second column of the nozzles are arranged alternately with each other and are respectively provided on opposite sidewalls of the electrical cabinet body (1).

4. The fire-fighting device of the electrical cabinet according to claim 1, wherein the controller is configured to control the alarm to start in a case that smoke concentration detected by the smoke and temperature combination detector (3) reaches the first set value, the internal temperature of the electrical cabinet body (1) reaches the second set value, or the flame state detected by the flame detector (2) reaches the set state.

5. The fire-fighting device of the electrical cabinet according to claim 1, wherein the controller is further communicated to a main controller of a rail train, and the controller is configured to send the smoke concentration detected by the smoke and temperature combination detector (3), the internal temperature of the electrical cabinet body (1) and the flame state detected by the flame detector (2) to the main controller of the rail train.

6. A fire-fighting method in application with a fire-fighting device for an electrical cabinet according to any one of claims 1 to 5, comprising a step of:

determining whether the smoke concentration detected by the smoke and temperature combination detector (3) reaches the first set value, the internal temperature of the electrical cabinet body (1) reaches the second set value, and the flame state detected by the flame detector (2) reaches the set state, and if the smoke concentration detected by the smoke and temperature combination detector (3) reaches the first set value, the internal temperature of the electrical cabinet body (1) reaches the second set value, and the flame state detected by the flame detector (2)

reaches the set state, the nozzle (4) is controlled to spray the agent.

7. The fire-fighting method for the electrical cabinet according to claim 6, further comprising a step of:

sending the smoke concentration detected by the smoke and temperature combination detector (3), the internal temperature of the electrical cabinet body (1), and the flame state detected by the flame detector (2) to the main controller of the rail train.

8. A rail train, comprising a fire-fighting device for an electrical cabinet according to any one of claims 1 to 5.