WHAT IS CLAIMED IS:

1. A control method for a gas appliance, wherein the gas appliance includes a burner, a gas valve, an igniter, and a thermocouple; the burner includes at least one flame port; the gas valve is installed on a gas pipe communicating with the burner and is controlled to open or close the gas pipe; the igniter is adjacent to the at least one flame port of the burner and is controlled to ignite a fuel gas flowing out of the at least one flame port; and the thermocouple is adjacent to the burner, is adapted to detect a flame, and generates a detected voltage with respect to a detection period of time; comprising the following steps:

A. controlling the igniter to ignite and controlling the gas valve to open;

B. receiving the detected voltage generated by the thermocouple;

C. controlling the igniter to stop igniting and keeping the gas valve open when the detected voltage reaches a first voltage value; and

D. receiving the detected voltage from the thermocouple continuously; and controlling the gas valve to close the gas pipe when the detected voltage above a second voltage value falls below the second voltage value, wherein the second voltage value is higher than the first voltage value;

wherein controlling the gas valve to close the gas pipe in step D is performed when the detected voltage has been below the second voltage value for a first predetermined period of time.

2. The control method of claim 1, wherein the first predetermined period of time is within ten seconds.

3. The control method of claim 1, further comprising the following step after step C: when a slope derived from the detected voltage with respect to the detection period of time decreases to a predetermined slope value, or when the fuel gas flowing into the burner has reached a predetermined fuel gas flow for a second predetermined period of time, recording the detected voltage as a recorded voltage value and then setting the first voltage

value based on the recorded voltage value, wherein the predetermined slope value is more than or equals to zero.

4. The control method of claim 3, wherein the first voltage value is set to be less than half the recorded voltage value.

5. The control method of claim 4, wherein the first voltage value is set to be between one third the recorded voltage value and one fourth the recorded voltage value.

6. The control method of claim 1, further comprising the following step between steps C and D: recording the detected voltage as a recorded voltage value and then setting the first voltage value based on the recorded voltage value when a slope derived from the detected voltage with respect to the detection period of time decreases to a predetermined slope value, or the fuel gas flowing into the burner has reached a predetermined fuel gas flow for a second predetermined period of time; wherein in step D, the second voltage value is set based on the recorded voltage value; and the predetermined slope value is more than or equals to zero.

7. The control method of claim 6, wherein the second voltage value is set to be more than half the recorded voltage value.

8. The control method of claim 7, wherein the second voltage value is set to be between two third the recorded voltage value and three fourth the recorded voltage value.

9. The control method of claim 1, wherein the second voltage value is more than twice the first voltage value.

10. The control method of claim 1, wherein step A is performed upon reception of a triggering signal; further comprising the following step after step D when the detected voltage is above the first voltage value: controlling the igniter to ignite and controlling the gas valve to open the gas pipe upon reception of the triggering signal if the detected voltage has decreased for a third predetermined period of time.

11. The control method of claim 10, further comprising the following step after step D:

controlling the igniter not to ignite upon reception of the triggering signal if the detected voltage has not decreased continuously for the third predetermined period of time.

12. The control method of claim 1, wherein step A is performed upon reception of a triggering signal; further comprising the following step after step D: controlling the igniter to ignite and controlling the gas valve to open the gas pipe upon reception of the triggering signal if the detected voltage generated by the thermocouple is below a third voltage value, wherein the third voltage value is between the first voltage value and the second voltage value.

13. The control method of claim 12, further comprising the following step after step D: controlling the igniter not to ignite upon reception of the triggering signal if the detected voltage is above the third voltage value.

14. The control method of claim 12, wherein the difference between the second voltage value and the third voltage value is less than one third the difference between the first voltage value and the second voltage value.

15. The control method of claim 1, wherein step A is performed upon reception of a triggering signal; further comprising the following step after step D: keeping the gas valve closed upon reception of the triggering signal if the detected voltage is above the first voltage value; and controlling the igniter to ignite as well as controlling the gas valve to open the gas pipe upon reception of the triggering signal if the detected voltage is below the first voltage value.

16. A gas appliance, comprising:

a burner including at least one flame port;

a gas valve installed on a gas pipe communicating with the burner and controlled to open or close the gas pipe;

an igniter adjacent to the at least one flame port of the burner and controlled to ignite a fuel gas flowing out of the at least one flame port;

a thermocouple adjacent to the burner, adapted to detect a flame, and generating a detected voltage with respect to a detection period of time; and

a control device electronically connected to the gas valve, the igniter, and the thermocouple for controlling the igniter to ignite and controlling the gas valve to open the gas pipe, wherein when the detected voltage generated by the thermocouple reaches a first voltage value, the control device controls the igniter to stop igniting and keeps the gas valve open; when the detected voltage above a second voltage value falls below the second voltage value, the control device controls the gas valve to close the gas pipe; and the second voltage value is higher than the first voltage value;

wherein the control device controls the gas valve to close the gas pipe when the detected voltage has been below the second voltage value for a first predetermined period of time.

17. The gas appliance of claim 16, wherein the second voltage value is more than twice the first voltage value.