To all whom it may concern:

Be it known that I, John F. Skoog, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented and useful Improvements in Lighting Devices for Oven-Burners, of which the following is a specification.

This invention relates to lighting devices for oven burners and consists in certain improvements in the construction thereof as will be hereinafter fully described and pointed out in the claims.

In the use of ovens heated by gas burners, there is danger of explosion in lighting the burners without opening the oven door. Where the burners are lit with the door open this danger is very largely obviated. It is also desirable to exclude the gases from the oven burners when the oven is closed.

Devices have herefore been made for lighting burners wherein a part of the gas is turned from the burner and conducted to a point in the oven in which point the gas so conducted might be picked up by the flame and carried back to the burners. This method while admirable in many respects is apt to fail where there is a strong draft or current of air. The reason for this is that the burners carrying the gas mixture must to form proper burners have such free discharge of the mixture as to preclude the delivery of the mixture to the lighting devices at such pressure as to overcome adverse currents. Furthermore, the delivery of gas directly from the burner is such mixture as to often retard the carrying back of the flame from the point of lighting to the burners and inasmuch as gas is escaping from the burners and this retardation of explosions of more or less violence are encountered.

The object of this invention is to improve lighting devices especially with relation to the defects herefore noted.

The invention is illustrated in the accompanying drawings.

Figure 1 shows a horizontal section of an oven on the line 1—1 in Fig. 2, the bottom of the oven being removed. Fig. 2 a front elevation of the oven, the door being open. Fig. 3 a section on the line 3—3 in Fig. 1. Fig. 4 a perspective view of the lighting tube. Fig. 5 a plan view partly in section of the lighting tube.

1 marks the oven chamber, 2 the oven door, 3 the oven bottom, and 4, 4 the oven burners. These burners have the jet openings 5. These may be arranged toward the bottom of the burner or toward the top as desired. Gas is delivered by way of the pipe 6, valve 7, the usual mixers 8, 8 being provided, one for each burner. As shown, these burners extend from front to rear but it will be understood that the burners may be arranged from side to side or in any direction desired.

The lighting tube 9 has the cross extensions 10, 10 making the tube as a whole T-shaped. The tube has the jet ends 11 and 12, these are so located as to throw a jet around the bottoms of the burners 4—4 so as to direct a flame to each of the rows of jet openings 5. The cross arms 10—10 have a slit 12 extending through the walls of the tube and the tube 9 has the slit 13 extending from the slit 12 through the walls of the tube 9, the slits 12 and 13 extending through the top surface. The slit 13 terminates within the walls of the base of the oven so as to be inaccessible from without the oven (see Fig. 8).

The mixture for lighting the device is delivered through an auxiliary tube 14 arranged beside the lighting tube 9. A transverse connection 15 extends from the tube 14 to the tube 9 and this transverse connection is preferably about the middle of the tube 9 so that the mixture is deflected and moves in both directions from the transverse connection 15. A mixer 16 is provided for the auxiliary tube 14 and the gas is delivered by way of a cock 17 and connection 18 from the pipe 6.

A gas conductor 19 is arranged over a portion of the slit 13 and extends into the oven chamber. The purpose of this conductor is to take the gas or mixture coming from the lighter tube and carry it to the oven chamber proper where the gas may be lighted the flame flashing back to the lighting tube. This conductor is closed on the top so that anything dropping in the oven may not drop on the slit 13. The bottom of this conductor is spaced from the lighting tube forming a space 20 so that the flame as it...
flashes back in the conductor 19 to the slit 13 directly under the conductor may run from within the conductor along the slit 13 so that the flame may be carried to the ends 11.

In the operation of the device the oven door is opened, the gas turned on to the lighter, the gas lighted at the opening at the upper end of the opening in front of the conductor 19, the conductor extending through the opening 21 in the bottom of the oven for this purpose. The gas flashes along the lighting tube to the ends 11 and as the gas is turned on the burners 4, the fuel in these burners is ignited. After the gas from the oven burners is ignited the gas is turned off the lighting tube, thus excluding any flow of gas to the oven through openings or otherwise to the oven.

By providing a separate gas supply to the lighting tube the supply can be so proportioned to the burner slit and the tube as to make a strong flame of considerable pressure but of small extent. This kind of flame differs entirely from the proper flame for an oven burner and such a flame will continue to exist irrespective of adverse air currents so that the lighting device operates positively under all conditions. Furthermore, there is no danger of carrying gas from the oven burners by way of the lighting device to the oven, the ends of the lighting device being in such position as to get no gas or fuel from the oven burners. By making the transverse connection to the lighting device is distributed throughout the lighting device so that there is no difficulty in lighting it even when under considerable pressure at the conductor.

By supplying the lighter tube with fuel independently of the burners the lighter tube is arranged outside the space between the burner and the oven chamber so that it does not interfere with the even heating of the chamber or the proper combustion of the fuel from the burner.

What I claim as new is:
1. The combination of an oven chamber; an oven burner adapted to heat the oven chamber; a lighter tube accessible for lighting only from the oven and adapted to carry flame to the oven burner; and means for supplying fuel to the lighter tube independently of the oven burner.
2. The combination of an oven chamber; an oven burner adapted to heat the oven chamber; a lighter tube to carry flame to the oven burner; a gas conductor leading from the lighter tube to the oven chamber and accessible for lighting only from the oven chamber; and means for supplying fuel to the lighter tube independently of the oven burner.

3. The combination of an oven chamber; an oven burner adapted to heat the chamber; a lighter tube adapted to carry flame to the burner; means for supplying fuel to the lighter tube in a direction transverse to the axis of said tube and independent of the oven burner; and a conductor leading from the lighter tube to the oven chamber.

4. The combination of an oven chamber; an oven burner adapted to heat the oven chamber; a lighter tube adapted to carry flame to the burner; a conductor leading from the lighter tube to the oven chamber; said conductor being spaced from the lighter tube to permit the transfer of flame from within the conductor to without the conductor along the lighter tube.

5. The combination of an oven chamber; an oven burner adapted to heat the oven chamber; a lighter tube adapted to convey flame to the burner; an auxiliary tube for supplying fuel to the lighter tube; said auxiliary tube being arranged in a direction parallel to the lighter tube; a transverse connection between the auxiliary tube and the lighter tube; means for supplying fuel to the auxiliary tube; and a conductor leading from the lighter tube to the oven chamber.

6. The combination of an oven chamber; an oven burner adapted to heat the oven chamber; a lighter tube terminating at a point outside the space between the burner and the oven chamber and accessible for lighting only within the oven chamber; and means for supplying fuel to the lighter tube independently of the oven burner.

7. The combination of an oven chamber; an oven burner adapted to heat the oven chamber; a lighter tube accessible for lighting from the oven and adapted to carry flame to the oven burner; and means for supplying fuel to the lighter tube independently of the oven burner.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN F. SKOOG.

Witnesses:
B. M. HARTMAN,
V. C. HESS.