June 4, 1963 H. C. LOHMAN 3,092,169

IGNITION CARRY-OVER

Filed Oct. 2, 1961

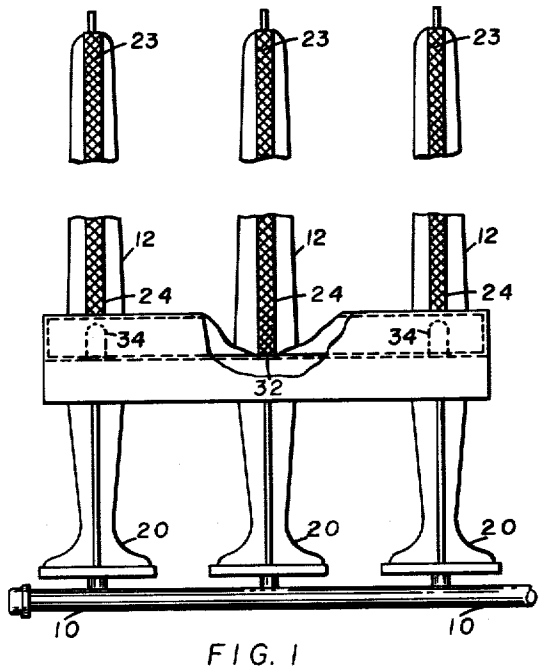


FIG. 1

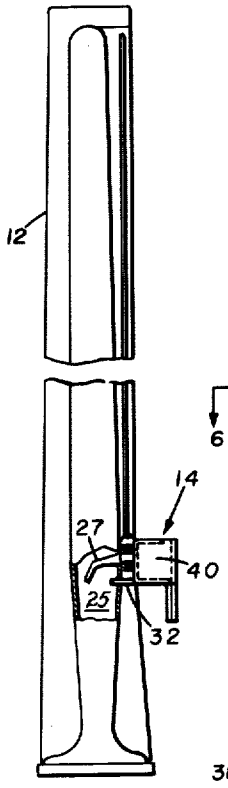


FIG. 3

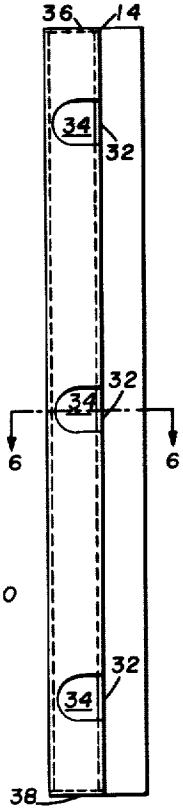


FIG. 4

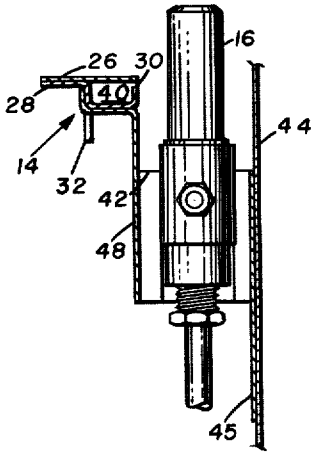


FIG. 5

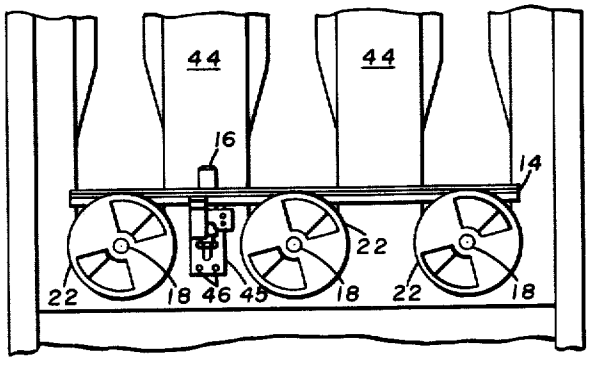


FIG. 2

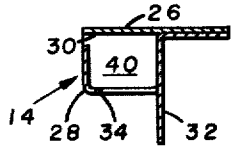


FIG. 6

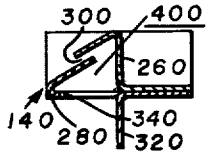


FIG. 7

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IGNITION CARRY-OVER

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This invention relates generally to gas burners and more particularly to a new and improved ignition carry-over for ignition of a plurality of gas burners from a single pilot flame.

An object of the invention is to provide a new and novel ignition carry-over which is inexpensive to produce and can be readily assembled to a plurality of gas burners.

Another object of the invention is to provide a new and novel ignition carry-over which cooperates with a single pilot flame to ignite a plurality of gas burners.

A third object of the invention is to provide an ignition carry-over in which the openings, left after punching out the supporting means, are employed to receive gas from a plurality of gas burners to provide a source of fuel for ignition of the gas burners.

A further object of the invention is to provide a pilot burner and ignition carry-over structure which cooperates to form an inexpensive and efficient ignition means for a plurality of gas burners.

Other objects and advantages of my invention will be clearly apparent as the specification proceeds to describe the invention with reference to the accompanying drawings, in which,

FIGURE 1 is a plan view of my ignition carry-over in operative relationship to a plurality of gas burners;

FIGURE 2 is a front elevation view of the gas burners and ignition carry-over of FIGURE 1 shown in relation to the pilot burner and heat exchanger;

FIGURE 3 is a side view of one of the burners shown in FIGURE 1 with a portion broken away;

FIGURE 4 is a bottom view of my new and improved ignition carry-over;

FIGURE 5 is a cross-sectional view showing the pilot burner in relation to the ignition carry-over;

FIGURE 6 is a cross-sectional view taken on line **6**—**6** of FIGURE 4; and

FIGURE 7 is a view similar to FIGURE 6 showing a modification of the ignition carry-over.

Looking now more particularly to FIGURES 1 and 2, a typical gas burner arrangement is shown. Gaseous fuel from manifold **10** is delivered to a plurality of corrugated ribbon type sheet metal burners **12** located substantially parallel to one another. To ignite the delivered gaseous fuel, an ignition carry-over **14** is provided to ignite the burners **12** from pilot burner **16**.

Gas burners **12** have the conventional spud receiving opening **18** in the end of the mixing bell **20**. Conventional shutters **22** are provided to regulate the amount of air mixed with the gaseous fuel. Metal ribbons **23** of any desired shape or configuration are located in the outlet opening **24** adjacent the mixing chamber **25** of the burner **12**. A scoop **27** is provided in each burner **12** to direct a portion of the air-gas mixture into my new and improved ignition carry-over.

Ignition carry-over **14** consists of an upper sheet metal member **26** spot welded or otherwise secured to lower sheet metal member **28**. Lower sheet metal member is shaped to cooperate with upper sheet metal member **26** to form an elongated opening or flame port **30** which is adjacent both the pilot member **16** and burners **12**. Tab members **32** are punched out of lower sheet metal member **28** at predetermined positions so that tabs **32** may be secured in burner outlet opening **24** between ribbons **23** and the rear of outlet opening **24** to position aperture **34**,

left from the formation of tabs **32**, over the appropriate burner in order to receive a gas-air mixture therefrom. The ends **36** and **38** of ignition carry-over **14** are formed upwardly from lower sheet metal member **28** to close the ends of gas receiving channel **40**.

A pilot burner bracket **42** is employed to support pilot burner **16** approximately midway between two of gas burners **12**. Pilot burner bracket is secured on one side **45** to heat exchanger **44** by screws **46**, or any other suitable means. The other side **48** of pilot burner bracket **42** is shaped to conform to the ignition carry-over **14** and is welded or otherwise secured to same in order to provide positive location of the pilot burner in relation to ignition carry-over **14**.

In operation, gas is fed into burners **12** through manifold **10** where it is mixed with primary air. A portion of this gas is diverted by scoops **27** through opening **34** of ignition carry-over **14** into the gas receiving channel **40**. This gas-air mixture is then ignited by pilot burner **16** and travels down flame port **30** and in turn ignites each of the burners **12**.

In the modification of FIGURE 7 ignition carry-over **140** has both the upper member **260** and the lower member **280** triangularly shaped in order to form a downwardly diverted flame port **300** in order to direct the ignition flame directly to the gas burners **12**. As in the embodiment of FIGURES 1–6, tab members **320** are snugly positioned in the ends of the gas burner to locate openings **340** over the respective burners in order to receive a gas-air mixture for ignition purposes.

My new and novel ignition carry-over structure provides positive location of the ignition carry-over to the burners with a minimum of manufacturing and assembly. The formation of tabs **32** or **320** provide a positive locating means for the ignition carry-over as well as providing at the same time an opening for the passage of an air-gas mixture for the purpose of ignition.

Although I have described in detail the preferred embodiments of my invention, I contemplate that many changes may be made without departing from the scope or spirit of my invention, and I desire to be limited only by the claims.

I claim:

1. A gas fired apparatus comprising: a plurality of elongated gas burners, said gas burners being substantially parallel to one another, means forming an inlet opening and an outlet opening in each of said burners, a ribbon type burner element in each of said outlets, manifold means connected to each of said inlet openings to supply gaseous fuel thereto, an ignition carry-over operably associated with said burners to ignite a gaseous fuel issuing from said outlets, said ignition carry-over having tab means formed outwardly therefrom and leaving openings in said ignition carry-over, said tab means being secured to said burners adjacent said ribbon type burner element, said openings being located over a portion of said outlets to receive gaseous fuel therefrom, scoop means secured in each of said burners adjacent said openings to divert gaseous fuel into said ignition carry over, said ignition carry-over having a flame port adjacent said outlets, and means supporting a pilot burner adjacent said flame port to ignite gaseous fuel therefrom and thereby produce an ignition flame for said burners.

2. A gas fired apparatus comprising: a plurality of elongated gas burners, said gas burners being substantially parallel to one another, means forming an inlet opening and an outlet opening in each of said burners, manifold means connected to each of said inlet openings to supply gaseous fuel thereto, an ignition carry-over operably associated with said burners to ignite a gaseous fuel issuing from said outlets, said ignition carry-over having tab

means formed outwardly therefrom and leaving openings in said ignition carry-over, said tab means being secured to said burners, said openings being located over a portion of said outlets to receive gaseous fuel therefrom, scoop means secured in each of said burners adjacent said openings to divert gaseous fuel into said ignition carry-over, said ignition carry-over having a flame port adjacent said outlets, and means supporting a pilot burner adjacent said flame port to ignite gaseous fuel therefrom and thereby produce an ignition flame for said burners.

3. A gas fired apparatus comprising: a plurality of elongated gas burners in spaced substantially parallel relation, each of said burners having an inlet and an elongated outlet, manifold means connected to each of said inlets to supply gaseous fuel thereto, an elongated ignition carry-over means traversing said burners at an angle thereto, said elongated ignition carry-over means being comprised of an elongated upper sheet metal member, a lower elongated sheet metal member, means sealingly securing the margin adjacent a first side of said upper member to the margin adjacent a first side of said lower member along the longitudinal length thereof, the margin adjacent a second side of said upper member being disposed in close spaced relation to an upwardly extending margin adjacent the second side of said lower member forming a flame port therebetween extending longitudinally with respect to said upper and lower members, the middle portions of said members intermediate said first and second sides being in spaced relation providing a gas conducting passage therebetween, said last mentioned spatial relationship being of greater magnitude than the spatial relationship between the margins adjacent the second sides of said members, said middle portion of said lower sheet metal member having tabs formed therefrom and extending outwardly of said gas conducting passage and leaving inlet apertures to said gas conducting passage remote from said flame port, each of said tabs being secured to one of said elongated gas burners, said inlet apertures being located over a portion of said burner outlets for receiving gas therefrom, and a pilot burner located adjacent said flame port for igniting gaseous fuel issuing therefrom.

4. A gas fired apparatus comprising: a plurality of elongated gas burners in spaced substantially parallel relationship, each of said burners having an inlet and an elongated outlet, manifold means connected to each of said inlets to supply gaseous fuel thereto, an elongated ignition carry-over means traversing said burners at an angle thereto, said elongated ignition carry-over including an elongated channel member having an upper portion and a lower portion, said upper and lower portions being in spaced relationship forming a gas carrying passage therebetween, said upper portion having a longitudinally extending margin in close spaced relation to an upwardly extending longitudinally extending margin of said lower portion forming therebetween an elongated flame port, said lower portion having a plurality of tabs formed therefrom remote from said upwardly extending margin member remote from said flame port, said tabs being seleaving a plurality of gas inlet apertures in said channel cured to said burners and said inlet apertures being located over a portion of said outlets of said burners to receive gaseous fuel therefrom, and a pilot burner located adjacent said flame port for igniting gaseous fuel issuing therefrom.

5. A gas fired apparatus comprising: a plurality of elongated gas burners, said gas burners being substantially parallel to one another, means forming an inlet opening and an elongated outlet opening in each of said burners, manifold means connected to each of said inlet openings for supplying gaseous fuel thereto, an elongated ignition carry-over extending substantially normal to said burners and operably associated with said burners to ignite a gaseous fuel issuing from said outlets, said elongated ignition carry-over including an elongated channel member having an upper portion and a lower portion, said upper and lower portions being in spaced relation forming a gas carrying passage therebetween, said upper portion having a longitudinally extending margin in close spaced relation to an upwardly extending longitudinal margin of said lower portion forming therebetween an elongated flame port, said lower portion having a plurality of tabs formed therefrom remote from said upwardly extending margin leaving a plurality of gas inlet apertures in said channel members remote from said margins, said tabs being removably secured to said burners and said inlet apertures being disposed over a portion of said outlets of said burners to receive gaseous fuel therefrom, a heat exchanger located adjacent said burners and a pilot burner mounting permanently connected to said carry-over and removably secured to said heat exchanger whereby said carry-over and a pilot burner may be removed as a unit without introducing spatial changes between the pilot burner and said carry-over.

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