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IGNITION DEVICE FOR GAS STOVES

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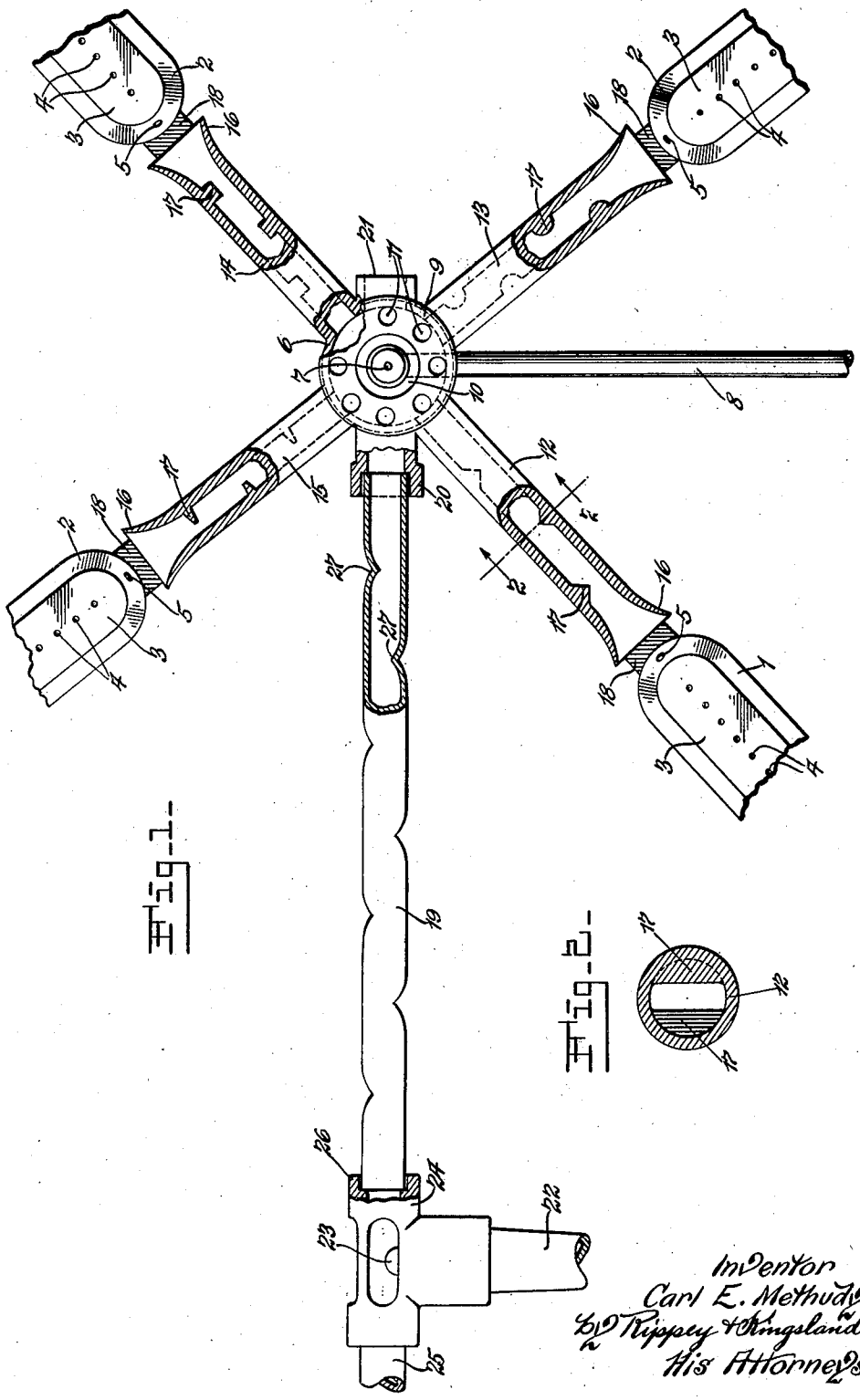


Fig. 1.

Fig. 2.

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UNITED STATES PATENT OFFICE

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IGNITION DEVICE FOR GAS STOVES

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This invention relates to ignition devices for gas stoves.

My prior Patent, No. 1,675,899, of July 3, 1928, discloses an automatic igniter for gas stoves and the like, whereby gas is received and conducted from the usual burner or burners of a gas stove to the casing of a constantly burning pilot light and is ignited by the constantly burning pilot light, and whereby a pressure wave of ignition is conducted from the pilot light to the usual burner or burners effectively to ignite the gas emerging from the ports in said burners.

The present invention relates to igniters of the general type mentioned and has for its objects to provide a better means for effecting a mixture of air and gas passing toward the pilot light casing so as to obtain quicker action of combustion back to the burner or burners from the pilot light casing; and to provide a construction permitting greater tolerance in the adjustment of the device with respect to the usual burner or burners of the gas stove.

Another object of the invention is to provide an improved device of the type and character mentioned for igniting gas passing to the usual pilot light device from a remote source, such, for instance, as from an oven burner.

Other objects and advantages of the invention will appear from the following description, reference being made to the accompanying drawing, in which—

Fig. 1 is a plan view, with parts in section, of my improved ignition device.

Fig. 2 is an enlarged cross sectional view approximately on the line 2—2 of Fig. 1.

My improved ignition device is designed and adapted to be mounted in a gas stove including a gas burner 1, or cluster of gas burners comprising a burner 1 and additional burners 2 arranged in a predetermined relationship. These burners have top walls 3 provided with numerous ports 4 constituting outlets for gas supplied to said burners from any usual or appropriate gas manifold, which are devices familiar in this art. The ports 4 open upwardly through the top walls of the burners. One side or end wall of each burner is formed with a special port 5 below the top walls of said burners through which gas is discharged into the ignition device, which is the subject of the present invention.

A pilot light casing 6 is mounted adjacent to the burner 1 or in proper relationship to the cluster of burners. A pilot light burner tip 7 extends upwardly into the lower portion of the casing 6, and is constantly supplied with gas through a pipe 8, so that the gas at the burner tip 7 is constantly burning. This device is appropriately designated as a constantly burning pilot light device.

The casing 6 is provided with a cover 9 having a central hole or opening 10 above the constantly burning pilot light device 7 and also having a series of spaced holes 11, all of which holes expedite the escape of burnt gases from the pilot light casing. The cover 9 covers and protects the casing and to an extent prevents foreign substances and liquids from coming into contact with the constantly burning pilot light and from entering the casing. The cover also serves to an extent to protect the constantly burning pilot light device and prevent the same from being extinguished by forces that might otherwise extinguish said light.

Tubes 12, 13, 14 and 15 are connected with the casing 6 and extend therefrom toward the respective burners 1 and 2 and have flared or enlarged portions 16 at their outer ends adjacent to the respective ports 5 and in a position to receive gas discharged from said ports 5. These flared or enlarged portions 16 serve the double function of receiving the gas and causing a quantity of air to be come mixed with the gas and causing the mixture of air and gas to enter the tubes 12, 13, 14 and 15 and to pass therethrough to the casing 6 in which the constantly burning pilot light 7 is enclosed.

In any desired relationship, the tubes 12, 13, 14 and 15 have on their inner sides projections or riffles 17 which break up the more dense bodies of gas and cause a better mixture of air so as to improve the combustible qualities of the gas.

The ends of the tubes 12, 13, 14 and 15 may be supported by or engaged with projections

18 in connection with the respective burners 1 and 2. These projections 18 cooperate to support the ignition device in proper relationship to the several burners, so that gas passing from the ports 5 will necessarily enter the ends of the tubes and become mixed with air to provide a readily combustible mixture before said mixture reaches the pilot light device.

The mixture of gas entering the pilot light device through any of the tubes is immediately ignited and a combustion pressure wave is forced back through the tube containing the gas, causing ignition of the gas at the port 5 and forcing the flame of combustion into contact with the gas passing from a number of the ports 4. Thus, the gas at the usual burners is quickly ignited and the gas continuing to pass from the port 5 is kept ignited at said port, so that substantially no amount of gas enters any of the tubes leading to the pilot light device.

A tube 19, constituting a part of a connection for igniting an oven burner (not shown), has one end received within a socket 20 opening into the pilot light casing 6 opposite a pressure relief port 21 at the opposite side of the pilot light casing. A gas supply pipe 22 communicates with a jet 23 within a frame device 24. Gas is delivered from the oven burner (not shown) to the jet device 23 through a pipe 25. And gas is delivered from the frame device 24 to the pilot light casing through the tube 19, one end of which is mounted in a socket 26 opening into the frame device 24.

The wall of the tube 19 is provided with a number of spaced inwardly extended riffles 27 which cause a better mixture of air and gas passing from the jet device 23 to the pilot light device 7.

I consider it preferable that the inner edges of the riffles 17 and 27 terminate short of the axes of the tubes in which the riffles are provided. This leaves a continuous central passage through each of the tubes with riffles along one or more of the sides of each tube. These riffles break up the bodies of gas along and adjacent to the walls of the tubes, create agitation, and effect better and more complete mixture of the gas and air.

The riffles may be of different shapes, a number of shapes being shown. The riffles along the different walls of each tube are in staggered relationship with respect to the riffles along the opposite wall, so that the riffles may be defined as being arranged in alternating series.

The construction and arrangement of the device may be varied otherwise than as specifically indicated without departure from the nature and principle of the invention. I do not restrict myself in any unessential respects, but what I claim and desire to secure by Letters Patent is:

1. A device of the character described comprising a constantly burning pilot light device, a burner member spaced from said device, means for conducting gas to said burner member, a tube for conducting gas from said burner member to said pilot light device, and series of spaced riffles in said tube, the riffles of each series being staggered and alternating with respect to the riffles of the other series.

2. A device of the character described comprising ignition means, a burner member spaced from said ignition means, a pipe for conducting gas to said burner member, a tube for conducting gas from said burner member to said ignition means for ignition thereby and for directing the flame of ignition from said ignition means to said burner member, and series of riffles in said tube and along opposite walls thereof and having their inner edges terminating short of the axis of said tube, the riffles of each series alternating with the riffles of the other series.

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