

J. F. RUTZ & J. K. LUETHE.
IGNITER TORCH FOR GAS BURNERS.
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1,009,184.

Patented Nov. 21, 1911.

Fig. 1.

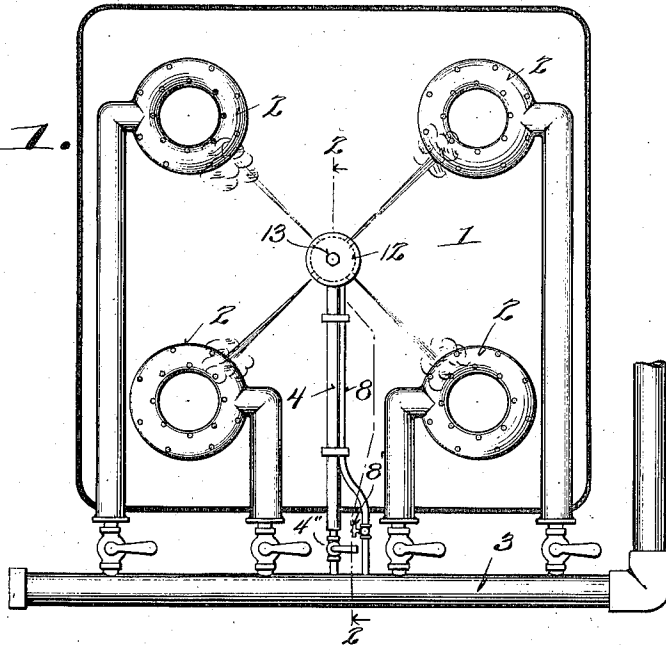
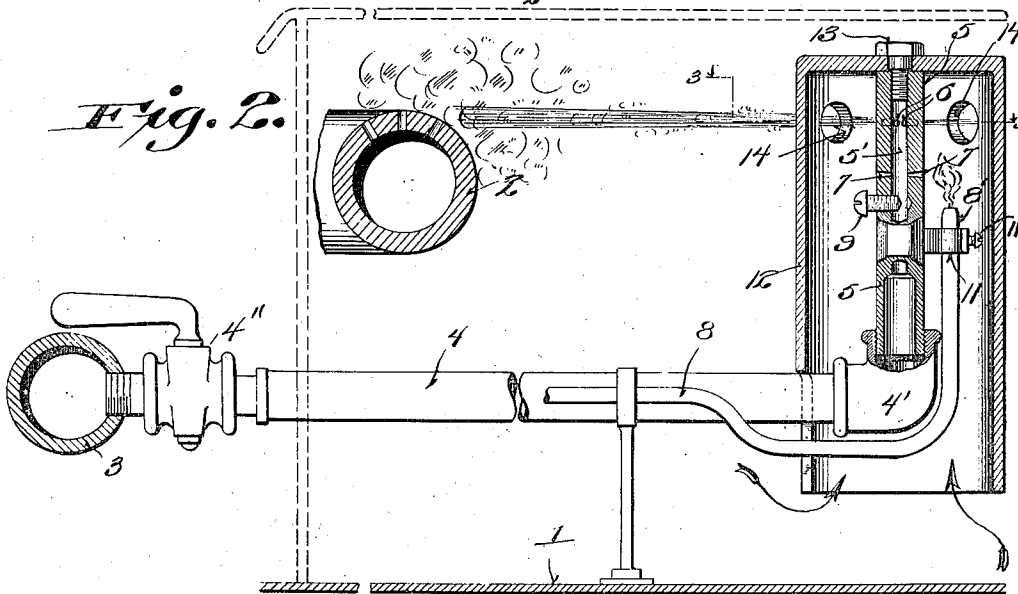


Fig. 2.



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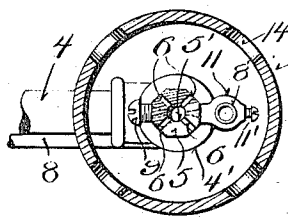


Fig. 3.
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UNITED STATES PATENT OFFICE.

JULIUS F. RUTZ AND JULIUS K. LUTHE, OF MILWAUKEE, WISCONSIN.

IGNITER-TORCH FOR GAS-BURNERS.

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Specification of Letters Patent.

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REISSUED

To all whom it may concern:

Be it known that we, JULIUS F. RUTZ and JULIUS K. LUTHE, both citizens of the United States, and residents of Milwaukee, in the county of Milwaukee and State of Wisconsin, post-office address 812 Brennan street, have invented certain new and useful Improvements in Igniter-Torches for Gas-Burners; and we do hereby declare that the following is a full, clear, and exact description thereof.

The primary object of our invention is to provide a simple, economical and effective igniter torch for gas burners.

Specific objects are to provide a single torch about which a series of valve-controlled burners are grouped within the zone and upon a plane common to individual jet flames that are discharged simultaneously from the torch; to provide a torch head incased within an apertured bell, the apertures being aligned with corresponding restricted gas-supply apertures in the torch head; to provide a constant pilot light within the bell whereby the various torch head gas-discharge apertures are simultaneously ignited, the bell forming an air shield for the pilot light whereby cross-currents of air due to exterior disturbances will not snuff out said pilot light, and to provide means whereby the air for the supply of oxygen to the torch flames and pilot light is received from a lower strata than that which supplies the burners, it being well known that ignited burners will consume practically all of the oxygen in the air thereabout and thus reduce the efficiency of a centrally located constant flame.

With the above objects in view our invention consists in what is herein shown, described and claimed.

In the drawings Figure 1 represents a plan view of a gas stove provided with a torch embodying the features of our invention; Fig. 2 an enlarged partially sectional elevation of the torch and its connection, the torch being shown located within a stove which is indicated in dotted lines and having the bottom compartment in full lines and in sections, there being a cross section of a portion of a burner located upon its proper plane relative to the igniter torch. The section of the igniter torch being indicated by line 2—2 of Fig. 1. Fig. 3, a detail

sectional plan view of the torch, the section being indicated by line 3—3 of Fig. 2.

Referring by characters to the drawings, 1 represents the bottom of the burner compartment of a stove, the front wall and skeleton top grid of which stove is illustrated in dotted lines. The stove is provided with a series of burners 2 under suitable valve-control and supplied with gas from a main pipe 3 in the ordinary manner. The branch pipe 4 having a valve 4' is connected to the main pipe 3, said branch pipe being extended into the burner compartment, where it terminates approximately at the center of the same and about which point the burners 2 are conveniently grouped. Coupled to the branch-pipe 4 by an elbow 4' is a vertically disposed torch-head 5, which torch-head is provided with a longitudinal channel 5' and terminates upon a plane slightly below the top grid. The torch-head is also provided with a radially disposed gas-discharge aperture 6 for each burner, the apertures being disposed upon approximately the same horizontal plane as the burners whereby the latter are each within the zone of an individual jet flame that is emitted from the gas-discharge apertures of said torch-head when a supply of gas is admitted thereto.

The torch-head has one or more leak apertures 7 below the gas discharge aperture 6, the leak apertures being staggered in their horizontal plane relative to the plane of the gas-discharge apertures whereby the latter are readily ignited, it being understood that gas from the leak-apertures is ignited by a constant burning torch-nozzle 8, the mouth of which is in juxtaposition thereto but upon a lower plane.

The supply of gas to the various torch-head apertures is regulated by a valve-plug 9 that is in threaded union with an opening which intersects the torch-head channel 5', the plug being below the discharge and leak apertures respectively and is adjusted to effect the desired control of gas thereto. The torch-nozzle 8 is formed from a small tube or pipe that communicates with the main supply-pipe 3 and adjacent to its junction therewith, is equipped with a cut-off valve 8', which, under ordinary conditions, is open, whereby gas is supplied in small quantities to the constant pilot flame. The end of the torch-nozzle is made fast to the

torch-head by its engagement with an apertured clip 11 and should it be desired to adjust the mouth of said nozzle relative to the leak apertures said adjustment can be effected by springing the pipe 8 up or down so as to change the position of the mouth of the same relative to the leak-aperture and thereafter the said pipe is secured within the clip by a set-screw 11' that is in threaded engagement with the clip.

The torch-head 5 and pilot-light nozzle 8' are incased in a bell 12, the top of which is secured to the upper end of said torch-head by a cap-screw 13 that is in threaded engagement with the torch-head channel 5' whereby the same is closed. The bell 12 is provided with a series of vent-holes 14, there being one for each gas-discharge aperture. These vent-holes are of considerably larger area than the discharge apertures and are in radial alinement therewith whereby flames emitted from said apertures are directed upon the various burners to cause ignition of the latter when their valve-controlled gas pipes are opened.

It is apparent from the foregoing description that in the operation of the torch the valve 8' of the pilot-light is normally open, whereby a small flame is constantly maintained within the bell and, owing to its inclosed position, liability of the same to be inadvertently blown out is practically eliminated. When it is desired to ignite one or all of the burners grouped about the torch the supply of gas thereto is admitted by operating their individual cocks and thereafter the valve 4'' which controls the gas-supply pipe 4 leading to the torch-head is opened. Gas will then pass out through the discharge aperture 6 and also the leak aperture 7, being slightly pocketed or confined within the top of the bell and simultaneously the torch nozzle 8' will ignite this supply of confined gas, causing a slight explosion which, in turn, will ignite the gas from the discharge apertures 6 and the flame from each of said apertures will be flashed through the vent-holes of the bell and directed upon the various burners whereby they, in turn, will be ignited. It is apparent that should only one of the burners be open to the supply of gas no effect upon the remaining burners will be had. Attention is also called to the fact that the air for the supply of oxygen to the torch is drawn in through the space between the mouth of the bell and the bottom 1, the intake of air being thus upon a considerably lower plane than the burners, the supply of sufficient oxygen for the torch is insured and furthermore the bottom of the bell being in juxtaposition to the bottom plate 1 said bell will effectually shield the pilot-light from the disturbing influence of cross-currents of air. It will be observed

that the horizontally alined vent-holes of the bell and discharge apertures 6 are so arranged for the purpose of discharging the torch flame at the most convenient point for igniting the burner.

We claim:

1. In a gas stove provided with a group of burners; the combination of an igniter torch located approximately centrally of the group, the torch comprising a vertically disposed head having a plurality of radially disposed apertures, each aperture being alined with a burner, a vertically disposed bell having a closed top incasing the head, the bell being provided with radially disposed vent holes, each being in register with a head aperture, a pilot nozzle extending into the bell in juxtaposition to the head apertures, and a gas supply means in communication with the head.

2. An igniter torch comprising a vertically disposed head having a plurality of radially disposed apertures, a vertically disposed closed bell having a closed top incasing the head, the bell being provided with a series of radially disposed vent holes, each being in register with a head aperture, a pilot nozzle extending into the bell in juxtaposition to the head apertures, and a gas supply means in communication with said head.

3. In a gas stove provided with a group of burners, the combination of an igniter torch located approximately centrally of the group, comprising a valve-controlled gas-supply pipe, a head in communication therewith about which the burners are grouped, the head being provided with an individual gas-discharge aperture alined with each burner and leak apertures below the gas-discharge apertures, a vertically disposed bell incasing the head provided with vent-holes each being in register with a gas-discharge aperture of the head, the mouth of the bell being upon a lower plane than that of the burners to form an air intake, means for securing the top of the bell to the head, means carried by the head for adjusting the flow of gas to its discharge apertures, and a pilot nozzle extending into the bell in juxtaposition to the leak apertures of the head and below the same.

4. In a gas-stove provided with a group of burners; the combination of an igniter torch located approximately centrally of the group, the torch comprising a vertically disposed head having a channel provided with gas discharge apertures adjacent to its upper end, each aperture being alined with a burner, a vertically disposed bell fitted over the head provided with vent-holes in register with the head apertures, the mouth of the bell being upon a lower horizontal plane than that of the burners to form an air intake shield whereby oxygen is supplied

to the torch and burner flames from different stratas of air, a cap-screw in threaded engagement with the head channel, a valve-plug carried by the head for controlling its
5 channel, and a pilot-nozzle extending into the bell its mouth being in juxtaposition to the gas-discharge apertures of said head.

In testimony that we claim the foregoing we have hereunto set our hands at Milwau-

kee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

JULIUS F. RUTZ.
JULIUS K. LUETHE.

Witnesses:

GEO. W. YOUNG,
MAY DOWNEY.