

F. A. HOYA.
IGNITER TORCH.
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Patented Nov. 26, 1912.

1,045,794.

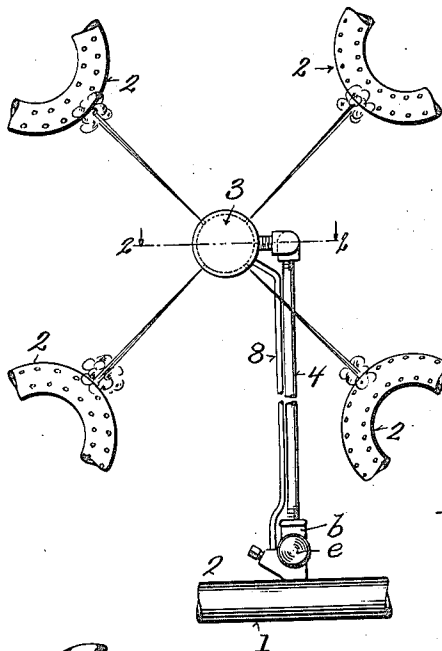


Fig. 1.

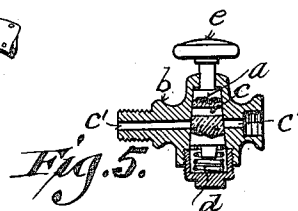


Fig. 5.

Fig. 2.

Fig. 3.

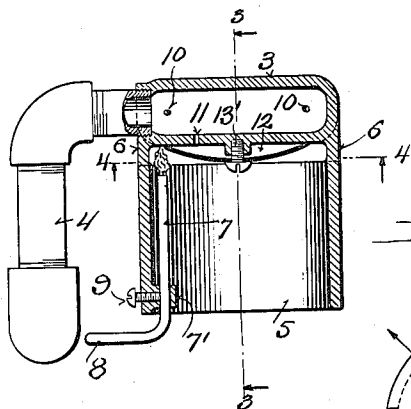
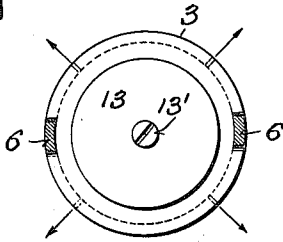
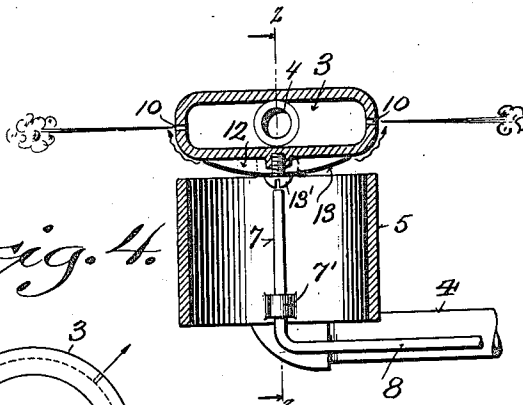


Fig. 4.



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UNITED STATES PATENT OFFICE.

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IGNITER-TORCH.

1,045,794.

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To all whom it may concern:

Be it known that I, FERDINAND A. HOYA, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Igniter-Torches; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a simple, economical and effective igniter torch that is positive in its action, the same being adapted for use in connection with a group of gas burners arranged in a zone about the torch, whereby individual jet-flames under control of a common valve are directed to such burners for igniting those of the group which have been previously opened to a source of gas supply, the said individual jet-flames being ignited by a constant pilot-light that is incased within a sleeve, which sleeve protects said pilot-light from the cross-currents of air that are produced incidental to the operation of gas stoves.

Specific objects of my invention are to provide a valve-controlled feed-pipe that is in communication with a hollow gas receiving head, the same constituting a chamber that is disposed within the zone of the various burners and is provided with horizontally disposed restricted discharge vents that are trained to direct jet-flames upon the burners; to provide an auxiliary lower chamber in connection with the hollow head, which auxiliary chamber is in communication with the upper or main receiving chamber and has a peripheral discharge mouth whereby a small quantity of gas is permitted to escape about and envelop the head; to provide a separable disk that is attached to the head whereby the auxiliary chamber is formed, the edge of the disk being spaced from the head to form a narrow restricted mouth through which a thin sheet of gas is permitted to escape; to provide a constantly burning pilot light disposed below the head and in juxtaposition to the discharge mouth of the auxiliary chamber whereby the thin film of gas therefrom is ignited, which ignited film in turn ignites the escaping gas at the jet vents of the upper chamber; to provide a self-closing valve for controlling the supply of gas to the head whereby the flow is automatically cut

off co-incident to relief of pressure upon said valve; to provide means for adjusting the discharge mouth of the pilot nozzle with relation to the upper edge of an inclosing sleeve, and to provide a head that is formed in one piece with a sleeve section, which section constitutes the torch shield whereby economy in construction is had.

With the above and other objects in view my invention consists in certain peculiarities of construction and combination of parts as set forth hereinafter with reference to the accompanying drawings and subsequently claimed.

In the drawings Figure 1 represents a plan view of an igniter torch embodying the features of my invention, the same being shown positioned centrally of a group of burners which are within the zone of individual jet-flames that are discharged from the torch head under valve-control, the said valve being of the automatic closing type; Fig. 2, an enlarged detailed sectional elevation of the torch, the section being indicated by line 2—2 of Fig. 1; Fig. 3, a sectional elevation of the torch, the section being indicated by line 3—3 of Fig. 2; Fig. 4, a detailed sectional plan view of said torch looking toward the head portion thereof, the section being indicated by line 4—4 of Fig. 2, and Fig. 5, a cross-section of a self closing press button valve, the closure being effected through spring pressure.

Referring by characters to the drawings, 1 represents a fragment of a main gas supply pipe that forms part of an ordinary gas stove and is equipped with the usual branch-pipes, not shown, that supply gas to burners 2, fragments of which only are shown to more clearly illustrate the operation and relative position of the torch. These burners are grouped about a hollow circular head 3, which head constitutes a gas-receiving chamber or reservoir and is supplied with gas through a feed-pipe 4, one end of which is in communication with the gas-receiving chamber of the head and the opposite end is in threaded connection with the main supply pipe 1, there being interposed between said main supply pipe and feed pipe 4 a self closing valve of the push-button type. This valve forms no part of my invention except in combination with an igniter and, as shown, the said valve comprises a reciprocative plunger *a* having a horizontally dis-

posed channel *c* therethrough, the plunger being mounted in a suitable valve-casing *b* that is provided with a feed channel *c'*, which channel is normally out of alignment with the plunger feed channel. The plunger *a* is held in this normal position by a coiled spring *d*, said plunger being manually pressed down when it is desired to open the valve by exerting power upon a push-button *e* with which the stem of the plunger is provided, it being understood that said stem projects through an aperture in the casing. It should be understood that the head 3 and its attached mechanism may be supported in its position upon approximately the same horizontal plane as that of the burners by any suitable means not shown in addition to the support that it receives from the pipe connection 4, whereby additional rigidity is had.

The head, for convenience and cheapness in construction is preferably cast integral with a depending open ended sleeve 5, the upper edge of which sleeve is spaced from the lower face of the head to form a passageway therebetween, the sleeve being connected to said head by webs 6 that form bridges between the walls of said head and sleeve. This sleeve 5 constitutes an air shield for an end nozzle 7 of a pilot light tube 8, the said nozzle being incased within the sleeve and is extended upward adjacent to its wall to a point slightly below the sleeve mouth or upper edge thereof, whereby the pilot flame is protected against cross currents of air that are created through the various disturbances incidental to the operation of a gas stove. The upper end of the tube which forms the pilot nozzle 7 is held and adjusted relative to the upper edge of the sleeve in an apertured lug 7' that extends from said sleeve, the tube being confined in its adjusted position by a set-screw 9, which set-screw is in threaded union with the sleeve with its end arranged to impinge against the tube. As shown in the plan view the feed tube 8 extends from the sleeve paralleling the gas feed pipe 4 and communicates with the main supply pipe 1 through the valve-casing *b*, which casing carries the automatic closing valve that controls the feed of gas to the main torch head chamber. Thus a single connection between the main supply pipe 1 and the torch only is had, whereby the torch mechanism is entirely self contained and can be readily attached to stoves of ordinary design by a simple threaded connection.

The circular hollow head 3 is provided with a series of radially disposed peripheral vent apertures 10, each being directed toward a gas burner, and the lower wall of said head is also provided with a restricted passage or vent 11 for the escape of gas to an auxiliary circular chamber 12 that is

disposed directly above the pilot light and protecting sleeve 5. The auxiliary gas discharge chamber 12 is preferably formed by a cupped circular disk 13 that is attached to the lower face of the head by a screw 13', which screw passes through a centrally arranged aperture within the disk and is in threaded engagement with a tapped recess formed in the lower wall of the aforesaid head. The circular edge of the disk 13 may, in practice, lightly impinge against the lower wall of the head 3 and owing to the fact that said wall is unfinished it is, to a certain extent, roughened and hence there will be ample space for the leakage of gas between the peripheral edge of the disk and roughened face of the head wall whereby a contracted mouth is formed to permit gas that is pocketed within the auxiliary chamber to escape and rise in a thin sheet-like body about the circular periphery of the head 3 as indicated by arrows in Fig. 3 of the drawings.

The discharge mouth of the pilot nozzle 7 is positioned approximately under one point of the circular gas discharge mouth of the auxiliary chamber and hence it is apparent that when the bottom of the torch-controlling valve is pressed downward, it opens communication between the upper chamber of the head and the main gas supply pipe whereby gas under pressure is admitted to said head. At the same time a small quantity of the gas from said main chamber, will enter the auxiliary chamber and be discharged in a circular sheet therefrom. This escaping sheet of gas is instantly ignited by the torch therebelow, which torch is in the zone of the leak. Thus the ignited gas from the auxiliary chamber instantly envelops the head and as the flame travels in a circular train thereabout each of the jets of escaping gas from the vents 10, will be ignited and by the pressure of the confined volume of gas within the head, cause a plurality of thin, pencil-like jets of flame to radiate from the head, which jets are directed to their respective burners simultaneously. Those burners which have been previously open to the main supply of gas will then be ignited and at the instant that the operator relieves the push button *e* from pressure, the torch-valve will automatically close whereby the supply of gas is cut off instantly. This self closing valve is particularly desirable in connection with any form of torch for the purpose mentioned, for the reason that under ordinary conditions, so far as I am aware, torch-valves have only been manually controlled to open and close and hence through inadvertence or negligence, the torch jets will remain burning and thereby more or less gas is wasted. Furthermore by utilizing a push button valve of this character the movement is

more convenient as the operation of lighting only requires an instantaneous movement obtained by pressure of the button.

In matters of detail, the construction of my improved igniter torch may be varied from what is herein specifically shown and described without departure from my invention as claimed.

I claim:

10 1. An igniter torch comprising a hollow gas receiving head constituting a main chamber having horizontally disposed discharge vents, an auxiliary chamber in communication with the main one under the same and having a restricted upper outlet, gas-burners in a zone about the head opposite said vents thereof, a sleeve below said head, and a pilot-light nozzle within the sleeve in juxtaposition to the outlet of the 20 auxiliary chamber.

2. An igniter torch comprising a hollow head, a valve-controlled pipe in communication therewith, the head being provided with a series of radially arranged vents, and 25 a restricted passage through its lower wall, a cupped disk secured to the lower head wall between the edges of which cup and wall a vent mouth is formed, an open ended sleeve disposed under the head, and a pilot-nozzle incased within said sleeve in juxtaposition to the mouth formed by the cupped disk and head wall.

3. An igniter torch comprising a valve controlled hollow gas receiving head constituting a main chamber having vents arranged to discharge in predetermined directions, an auxiliary chamber in communication with the main one under the same and having a restricted upper outlet, a sleeve below the head, and a pilot light nozzle within the sleeve in juxtaposition to the outlet of the auxiliary chamber.

4. An igniter torch comprising a hollow gas receiving head constituting a main

chamber provided with discharge vents, an auxiliary chamber in communication with the main one under the same and provided with an upper outlet, a sleeve below said head, and a pilot-light nozzle within the sleeve.

5. An igniter torch comprising a hollow gas receiving head constituting a main chamber provided with discharge vents, an auxiliary chamber in communication with the main one under the same and provided with an upper outlet, a sleeve below said head, and a pilot-light nozzle vertically adjustable within the sleeve.

6. An igniter torch comprising a hollow gas receiving head constituting a vented main chamber, a depending sleeve integral with the head and open under the same, an auxiliary chamber in communication with the main one and the sleeve, and a pilot-light nozzle within said sleeve in juxtaposition to the outlet thereto of the auxiliary chamber.

7. An igniter torch comprising a hollow circular head having radial vents in its periphery and a vent passage through its lower wall, a cupped disk secured to the lower wall incasing the vent therein, the edges of the cupped disk being spaced from the wall to permit a flow of gas therebetween, an open ended sleeve in webbed connection with the hollow head, an apertured ear carried by the sleeve, a pilot nozzle fitted through the apertured ear, and means for locking the nozzle to the ear.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

FERDINAND A. HOYA.

Witnesses:

GEO. W. YOUNG,
M. E. DOWNEY.