Feb. 3, 1925. 1,524,832

W. A. McCOY, JR

BURNER OR PREHEATING TORCH

Original Filed Oct. 19, 1921 2 Sheets-Sheet 1

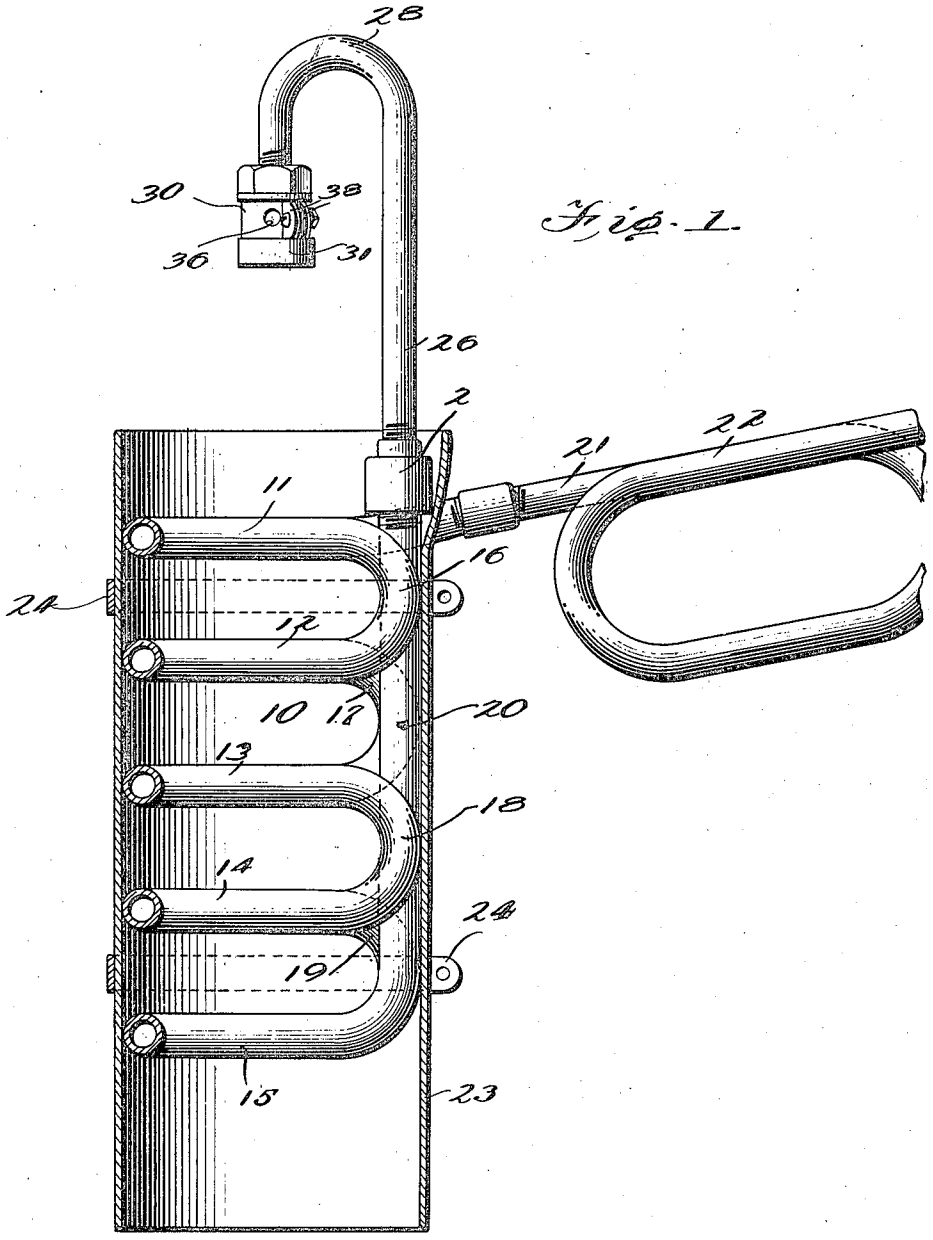


Fig. 1.

WITNESSES

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Fig. 2.

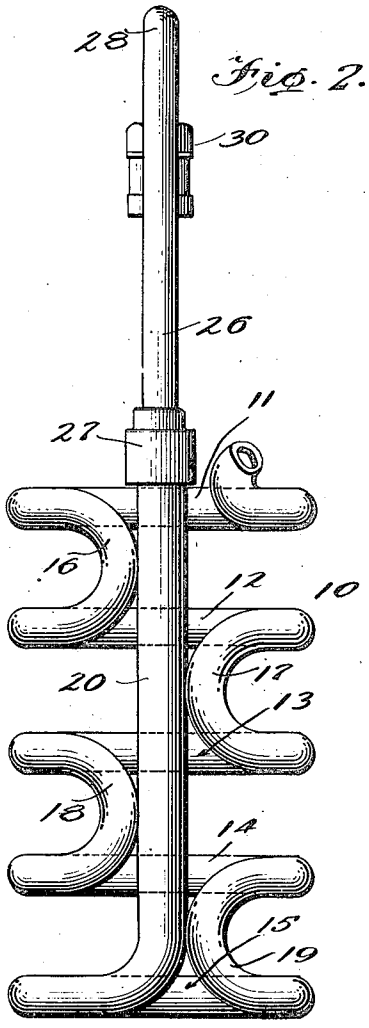


Fig. 3.

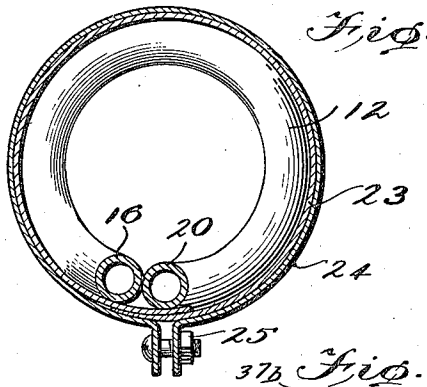


Fig. 6.

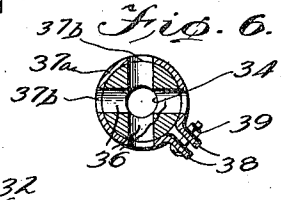


Fig. 5.

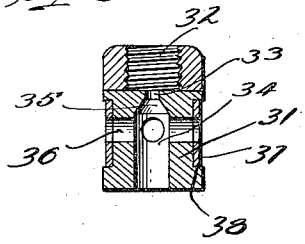
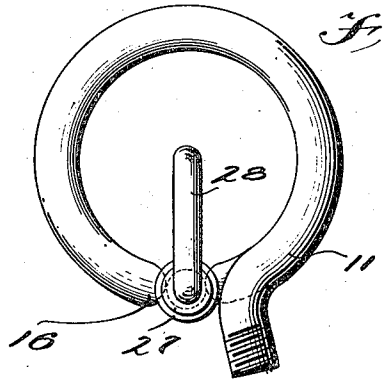


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

WALLIS ABNER McCOY, JR., OF McCOY, TEXAS.

BURNER OR PREHEATING TORCH.

Application filed October 19, 1921, Serial No. 508,799. Renewed October 11, 1924.

To all whom it may concern:

Be it known that I, WALLIS ABNER McCOY, Jr., a citizen of the United States, and a resident of McCoy, in the county of Atascosa and State of Texas, have invented certain new and useful Improvements in Burners or Preheating Torches, of which the following is a specification.

The present invention relates to an improvement in burners or preheating torches, and has for its object to provide a device of this character which efficiently generates its own fuel gas from kerosene or similar hydrocarbons; which provides for a complete and uniform mixture of the gas and air; which is readily controlled; and which is simple and durable in construction, reliable and effective in operation and easy and inexpensive to manufacture.

Other objects and advantages of the invention reside in certain novel features of construction, combination and arrangement of parts which will be hereinafter more fully described and particularly pointed out in the appended claims, reference being had to the accompanying drawings forming part of this specification, and in which:

Figure 1 is a view in longitudinal section, illustrating the preferred embodiment of the invention;

Figure 2 is a view in elevation with the jacket removed;

Figure 3 is a view in transverse section;

Figure 4 is a plan view;

Figure 5 is a detail view in longitudinal section of the burner; and

Figure 6 is a similar view in transverse section.

Referring to the drawings wherein for the sake of illustration is shown the preferred embodiment of the invention the numeral 10 designates generally a generator or retort preferably constructed of a single piece of pipe and comprising a series of spaced, parallel and coaxial convolutions 11, 12, 13, 14 and 15, and U-shaped connections 16, 17, 18 and 19. The connection 16 affords communication between the convolutions 11 and 12, the connection 17 between convolutions 12 and 13, the connection 18 between convolutions 13 and 14 and the connection 19 between convolutions 14 and 15. The convolutions are not complete circles and the gaps thereof are alined and through these alined gaps the pipe which makes up the retort is extended to provide an outlet 20 from the generator. The connections 16 and 18 bear on one side of the outlet pipe 20 and the connections 17 and 19 bear on the opposite side thereof and are staggered with respect to the connections 16 and 18, thereby strengthening and organizing the generator.

An inlet pipe 21 for the kerosene or other fuel is connected with the convolution 11 of the generator coil and is looped, as at 22, to provide a handle.

A jacket 23 is provided for the generator coil and is secured thereon by clamp bands 24 and bolts and nuts 25.

To the outlet pipe 20 of the generator coil, a burner pipe 26 is connected by a reducing coupling 27. The upper end of the burner pipe is provided with a goose-neck or return bend 28 to which the burner designated generally at 30 is connected.

The burner 30 comprises a body portion 31 having its upper end tapped, as at 32, whereby it may be threadedly connected with the goose-neck 28 and having the periphery of its upper end of polygonal form to facilitate turning. The threaded opening 32 communicates with a minute axial bore 33 which communicates with an axially extending cylindrical chamber 34 by means of a flaring conical passage 35. A circumferential series of radially extending air inlet openings 36 lead from the periphery of the burner into the chamber 34. A ring valve 37 is seated in an annular recess 38 which intersects the air inlet openings 36 and includes a plurality of imperforate segments 37^a and a plurality of openings 37^b. The segments 37^a when alined with the openings 36 cover and close the same and the openings 37^b may be brought into full or partial registry with the air inlet openings whereby the inlet of air may be controlled and regulated. The ring valve 37 is split and the ends thereof are extended outwardly to form apertured ears 38 with which a stove bolt 39 or the like is associated so that the ring valve can be clamped in adjusted position.

In operation, the fuel, such as kerosene or other similar hydrocarbon, is supplied under pressure to the generating coil or retort through the inlet pipe 21. In the retort the fuel is vaporized or gasified and in this state passes into the burner pipe 26 and goose-neck 28. As the fuel is supplied under pressure the gas thus generated issues in a jet from the minute axial bore or jet opening 33 into the chamber. In the

chamber 34 it entrains the air and forms a mixture therewith, the chamber 34 thus constituting a mixing chamber and the combustible mixture thus produced is projected axially of the generator coil and of the jacket which encloses this coil wherein it is ignited.

The generation of the gas can be readily controlled by varying the distance of the burner from the generating coil, this being readily carried out by adjusting or varying the length of the goose-neck 28.

The burner can be advantageously utilized for any purpose where a large flame is required such as preheating for welding purposes and for pear burning for stock.

I claim:

1. In a burner, a generator constructed of a single piece of pipe and comprising a series of spaced parallel and coaxial convolutions and U-shaped connections between said convolutions, the convolutions having alined gaps and an outlet pipe from said generator extending through said gaps and engaged by the U-shaped connections, a jacket enclosing said generator, clamps for securing said jacket in position, an inlet pipe to said generator having a portion formed to constitute a handle, a burner pipe, a reducing coupling between said burner pipe and said generator, said burner pipe having a goose-neck, and a burner connected with said goose-neck and having its flame jet directed toward said generator.

2. In a burner, a generator comprising a series of spaced parallel, and coaxial convolutions, and connections between said convolutions, the convolutions having alined gaps and an outlet pipe from said generator extending through said gaps and engaged by the connections, a jacket enclosing said generator, an inlet pipe to said generator, a burner pipe connected with said generator, said burner pipe having a goose-neck, and a burner connected with said goose-neck and having its flame jet directed toward said generator.

3. In a burner, a generator comprising a series of connected convolutions, each having a circumferential extent slightly less than 360° to provide a series of gaps in said convolutions, and an outlet pipe extending through gaps and engaged with said convolutions, a burner pipe connected with said outlet pipe and a burner carried by said burner pipe and having a flame jet directed toward said generator.

4. In a burner, a generator comprising a series of connected convolutions, each having a circumferential extent slightly less than 360° to provide a series of gaps in said convolutions, and an outlet pipe extending through gaps and engaged with said convolutions, a burner pipe connected with said outlet pipe and a burner carried by said burner pipe and having a flame jet directed toward said generator and comprising a body portion having a mixing chamber, and provided with an axial fuel inlet and radial air inlets to said mixing chamber.

5. In a burner, a generator comprising a series of spaced parallel and coaxial convolutions, U-shaped connections between said convolutions, the convolutions having alined gaps, an outlet pipe extending through said gaps and engaging the U-shaped connections, a jacket enclosing said generator and clamps for securing the jacket in position.

6. In a burner, a generator comprising a series of spaced parallel and coaxial convolutions, and U-shaped connections between said convolutions.

WALLIS ABNER McCOY, JR.