W. F. SEILKOP.

PRESSURE BURNER.

APPLICATION FILED OCT. 17, 1917.

1,264,983. Patented May 7, 1918.

Fig. 1.

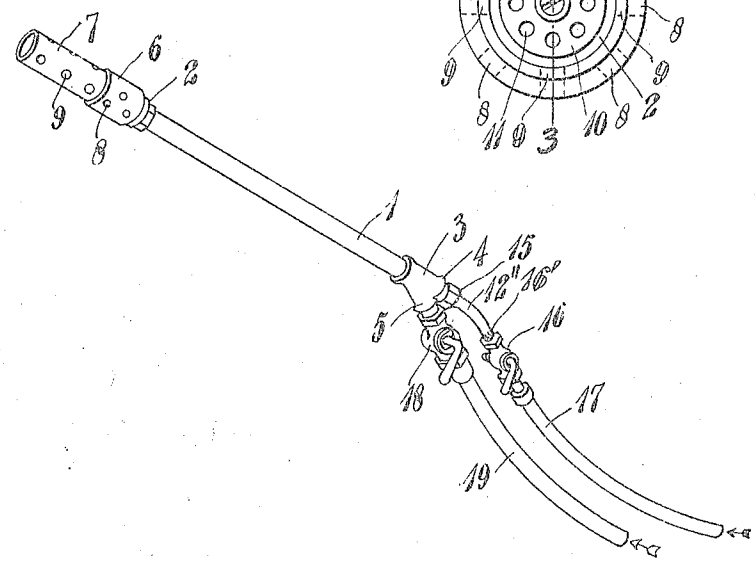
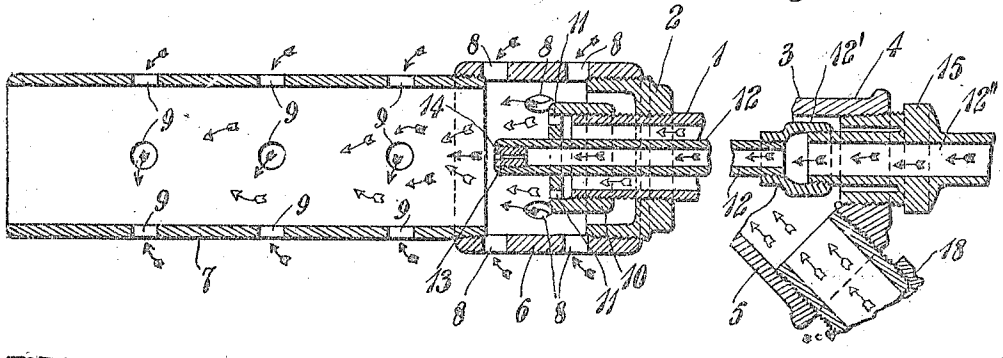


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM F. SEILKOP, OF CINCINNATI, OHIO.

PRESSURE-BURNER.

1,264,983. Specification of Letters Patent. Patented May 7, 1918.

Application filed October 17, 1917. Serial No. 197,106.

To all whom it may concern:

Be it known that I, WILLIAM F. SEILKOP, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Pressure-Burners, of which the following is a specification.

My invention relates to pressure-burners, and its object is to provide for an efficient combustion of ordinary fuel gas with a supply of air under pressure.

My invention consists in the combination of parts and in the details of construction and arrangement of parts as will hereinafter be more fully described and claimed.

In the drawing:

Figure 1 is a general perspective view of a device embodying my invention;

Fig. 2 is a view of the front end of the burner;

Fig. 3 is a vertical longitudinal section of the burner on a plane corresponding to the line 3—3 of Fig. 2, the middle parts of the burner being omitted for lack of space.

As I prefer to construct my improved burner, there is the main gas tube 1, the front end of which is screwed through a bushing 2 (Fig. 3) and the rear end of which is screwed into a coupling 3 which comprises a main straight part 4 and a branching part 5 (Fig. 1.) The burner-hood comprises a coupling 6 having its rear end part screwed onto the outside of the bushing 2, and having screwed into its front end part the main hood part 7. These parts 6 and 7 have perforations 8 and 9, respectively, in their walls.

Where the main gas tube 1 extends forward through the bushing 2, it receives on its end part a cap 10 that has a concentric series of perforations 11 through its front, and a large central perforation through which extends the compressed-air tube 12. This tube 12 extends a considerable distance forward of the front side of the cap 10 and has screwed into it a plug 13 with a very small central passage 14.

The rear end of the main part 4 of the coupling 3 that connects with the rear end of the tube 1 has the bushing 15, and the compressed-air tube 12 extends the entire length of the gas tube 1 and connects, by means of a reducing coupling 12′ with an inlet pipe 12″ that extends back through this bushing 15. Preferably, this pipe 12″ is welded to the bushing 15 where it extends therethrough, because it is found in practice that this pipe where it extends out at the rear is subjected to hard blows where the tool is thrown around in use. The rear end part of the pipe 12″ preferably bends slightly downward so as to come substantially parallel with the branch 5 of the coupling 3 (Fig. 1) and connects through a suitable controlling cock 16 with the air hose 17. Preferably, a screen 16′ (Fig. 1) is interposed therein to prevent passage of particles to the small orifice 14. The branch 5 communicates through a suitable controlling cock 18 with the gas hose 19.

With the burner constructed as just described, it will be seen that the gas being supplied through the hose 19 passes forward through the gas tube 1 and out through the perforations 11 into the hood, while the compressed air from the hose 17 passes forward through the tube 12 and out through the small perforation 14. The gas issuing from the perforations 11 uniformly around the jet of compressed air from the perforation 14 will be combined therewith and the combustion will be permitted to take place throughout the length of the main hood part 7 with the help of the air through the longitudinally distributed perforations 9 of the hood.

I have improved the construction of burners of this kind by carrying the orifice 14 for the escape of the compressed air a considerable distance forward of the gas outlet orifices 11. Where the gas and air escape substantially in the same transverse plane, there is always a tendency with a strong blast of air to extinguish the flame; whereas with my improvement, a stronger blast of air serves to induce stronger currents of gas from the orifices 11 up to the capacity of the gas supply, and those with the increased quantities of gas and air produce a hot flame of greater volume than before the increase of air pressure.

It will be noted that the cap 10 screws on to the tube 1, but the tube 12 merely slides through the cap 10. Thus, the cap is very conveniently adjusted lengthwise relatively to the orifice 14, and is readily removable for cleaning or renewal. Also, the provision of the small plug 13 in the end of the tube 12 is very convenient since this plug may be very conveniently removed for cleaning

or renewal. All of the parts of the burner except this plug 13 are preferably made of wrought iron; but this plug 13 is preferably made of brass or other metal less subject to corrosion than iron. This provision is highly desirable where the air contains a considerable proportion of moisture.

I also improve the combustion somewhat by providing the amply large perforations 8 and 9 in the hood to freely admit air under atmospheric pressure to the outer sides of the jets of gas from the perforations 11.

It will be understood that burners of this kind are used for pre-heating where welding is to be done electrically or by means of oxygen and acetylene gas and also for drying molds in foundries and many other kinds of work about a shop where a convenient portable burner with a comparatively large capacity is needed.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a pressure-burner, an outer tube, an inner tube running through the inside of said outer tube, distributing means around said inner tube at the front end of said outer tube with a surrounding series of outlet orifices substantially in a single transverse plane, said inner tube having an outlet orifice, a hood inclosing the space around said outlet orifices and extending a considerable distance forwardly thereof and having a longitudinal series of lateral perforations and an open front end, and supply connections to the respective rear ends of said tubes.

2. In a pressure-burner, an outer gas tube, an inner tube running through the inside of said gas tube, gas distributing means around said inner tube at the front end of said outer tube with a surrounding series of gas outlet orifices substantially in a single transverse plane, said inner tube having an outlet orifice a considerable distance forward of said gas outlet orifices, a hood inclosing the space around said outlet orifices and extending a considerable distance forwardly thereof and having a longitudinal series of lateral perforations and an open front end, and supply connections to the respective rear ends of said tubes.

3. In a pressure burner, an outer tube with an exteriorly threaded end part, an inner tube running through the inside of said outer tube and having an exteriorly substantially smooth end part projecting from said end of said outer tube substantially concentric therewith, and having an outlet aperture in its projecting end part, a cap having an internally threaded end part screwed onto said end part of said outer tube and a central aperture through which said substantially smooth end part of said inner tube may slide when said cap is screwed onto said outer tube, and having a series of outlet apertures for said outer tube, around said central aperture, a hood around said outlet apertures, and supply connections, respectively, to said outer and inner tubes.

4. In a pressure burner, an outer tube with an exteriorly threaded end part, an inner tube running through the inside of said outer tube and having an exteriorly substantially smooth end part projecting from said end of said outer tube substantially concentric therewith, and having an outlet aperture in its projecting end part, a hood having an internally threaded end part screwed onto said end part of said outer tube with said threaded end part projecting into said hood, a cap having an internally threaded end part screwed onto said projecting end part of said outer tube and a central aperture through which said substantially smooth end part of said inner tube may slide when said cap is screwed onto said outer tube, and having a series of outlet apertures for said outer tube, around said central aperture, said hood projecting past and around said outlet apertures, and supply connections respectively, to said outer and inner tubes.

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