G. W. HOPKINS.

BURNER.

APPLICATION FILED SEPT. 16, 1912.

1,142,098.

Patented June 8, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

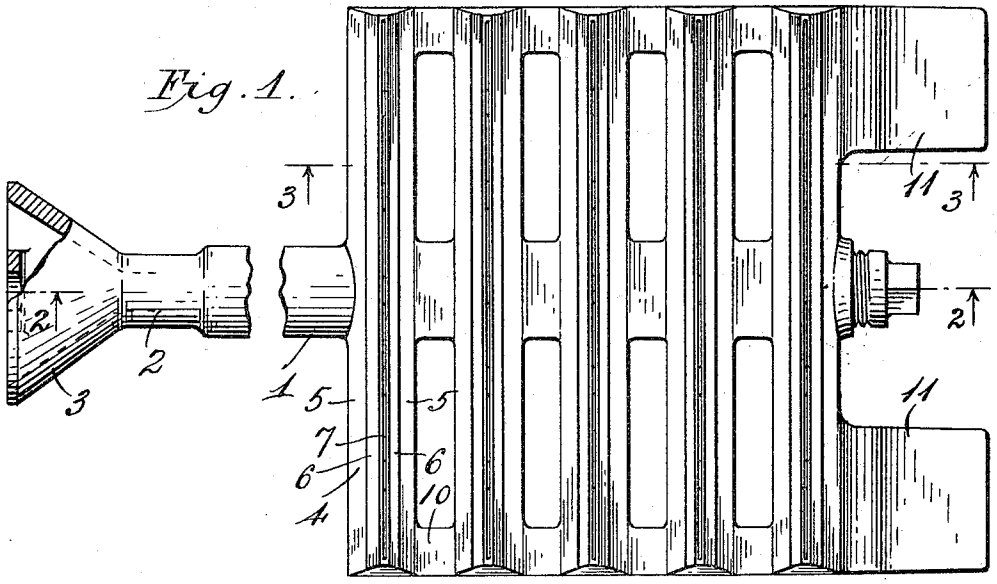


Fig. 2.

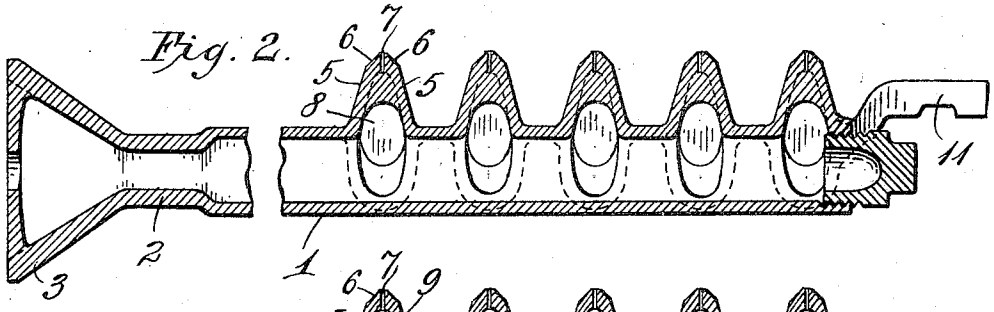


Fig. 3.

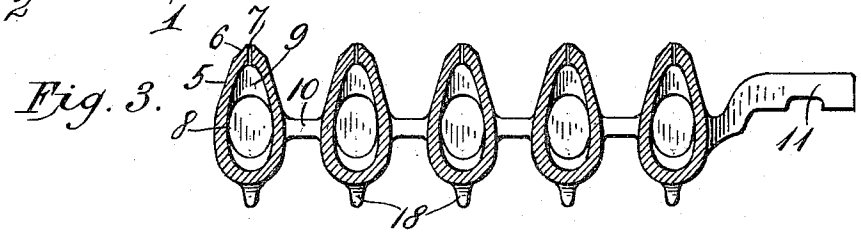
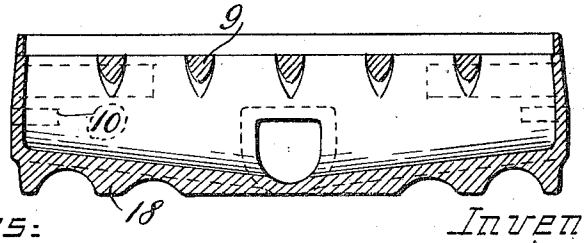


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

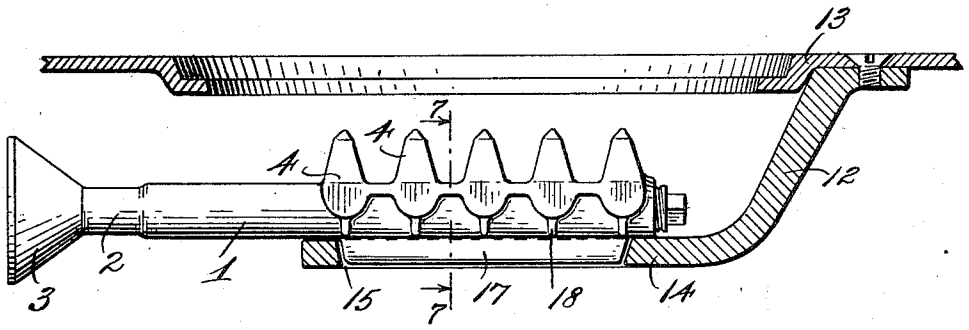
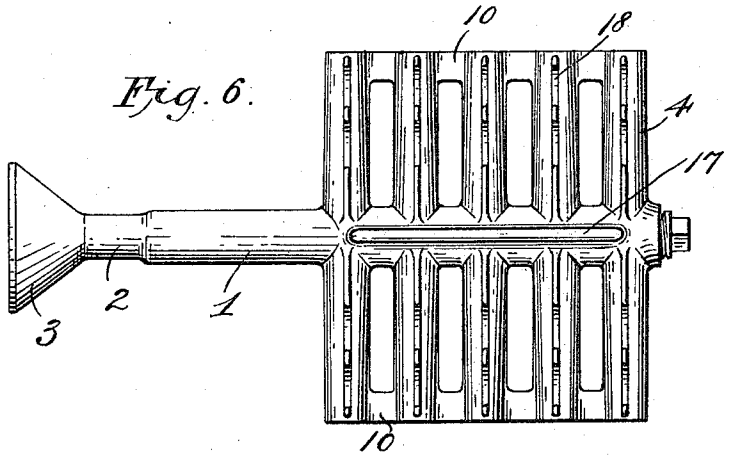


Fig. 6.



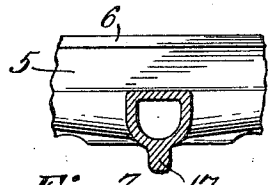


Fig. 7

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UNITED STATES PATENT OFFICE.

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BURNER.

1,142,098. Specification of Letters Patent. Patented June 8, 1915.

Application filed September 16, 1912. Serial No. 720,525.

To all whom it may concern:

Be it known that I, GEORGE W. HOPKINS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Burners, of which the following is a specification.

This invention relates generally to burners and particularly to such devices utilized for burning acetylene gas.

More specifically the invention relates to a hollow body or mixing portion integral with and forming a part of burner sections which are preferably arranged at substantially right angles to the main body portion and are parallel with respect to each other, each of said burner sections having sides inclining inward with upper burner edges inclined toward a burner orifice which is arranged in the section, it being an important feature to have the burner integral and of cast metal to provide for heat conduction from the metal about the burner orifice.

Further invention resides in certain webbing between the parallel burner sections to provide for the radiation of heat from the innermost sections and further to suitable supporting lugs cast integral with the burner serving to radiate the heat from the webs; and still further to a mounting for the burner whereby heat from the burner is transmitted to the frame.

The invention may be further briefly summarized as consisting in the construction and combination of parts hereinafter set forth in the following description, drawings and claims.

Referring to the drawings, Figure 1 is a top plan view of a burner; Fig. 2 is a section upon the line 2—2 of Fig. 1; Fig. 3 is a section upon the line 3—3 of Fig. 1; Fig. 4 is a longitudinal section through one of the burner sections; Fig. 5 is a side elevation of a portion of the framework of the stove showing the mounting of a preferred form of burner; Fig. 6 is a bottom plan view of this preferred form of burner, and Fig. 7 is a section upon the line 7—7 of Fig. 5.

In carrying out the invention any preferred form and construction of parts may be employed so long as they possess the necessary characteristics, but I have shown two forms in the drawings, and in one embodiment, 1 represents the main body portion or mixing tube having a restricted portion 2 near the outer end thereof and connected to a suitable wind shield 3. The main body portion is provided with a plurality of burner sections 4 having inclined sides 5 merging into sides 6 having a different degree of inclination and extending to a point adjacent to a burner orifice 7 in the upper longitudinal edge. Each of the burner sections is provided with an opening 8 communicating with the opening in the main body portion 1 of the burner and furnishing means for supplying gas to each of the burner sections. Each of the burner sections may be provided with a web 9 formed integral with the sides of the burner section and extending across the same underneath the burner orifice, thereby furnishing means for holding the sides of the burner section next to the orifice at the proper distance apart, and further tending to break up the continuous flame which would otherwise issue from the section. The burner sections 4 are secured together at their ends by suitable webs 10 which furnish means for transmitting the heat from section to section. The burner is still further provided with lugs 11 which are integral with the end burner section near its ends which forms a supporting means and also conveys the heat from the burner to the frame of the stove. The burner may be mounted in still another manner in which case a bracket 12 is secured to the underside of the upper framework 13 of the stove and has a portion 14 extending under the opening in the frame and is provided with a longitudinal slot 15 for receiving a longitudinal web 17 cast along the underside of the main body portion 1 of the burner. The burner sections may also be provided with suitable radiating fins or webs 18.

The integral structure of the burner and the peculiar shape as set forth is of the greatest importance in acetylene burners by reason of the fact that with it there is a large releasing area for the gas and air and at the same time the heat is radiated from the burner so that the decomposition of the acetylene gas by reason of the heat of the burner is avoided.

Having described my invention, I claim:—

1. A burner for acetylene gas comprising a frame, a body portion, integral burner sections arranged parallel and transverse with respect to the body portion and having inclined upper sides meeting at an apex and also having a gas slot at each apex, means

formed integral with the burner sections for radiating the heat from one to the other, and integral means forming part of the burner for radiating the heat from the burner to the frame.

2. In a burner structure for acetylene comprising a frame, a body portion, a plurality of parallel burner sections formed integral with the body portion, a radiating rib cast with the main body portion, and means for receiving said rib and for transmitting the heat from the burner to the frame.

In testimony whereof I affix my signature in presence of two witnesses as follows:

GEORGE W. HOPKINS.

Witnesses:

ALTON H. BEMIS,

C. H. TRESCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."