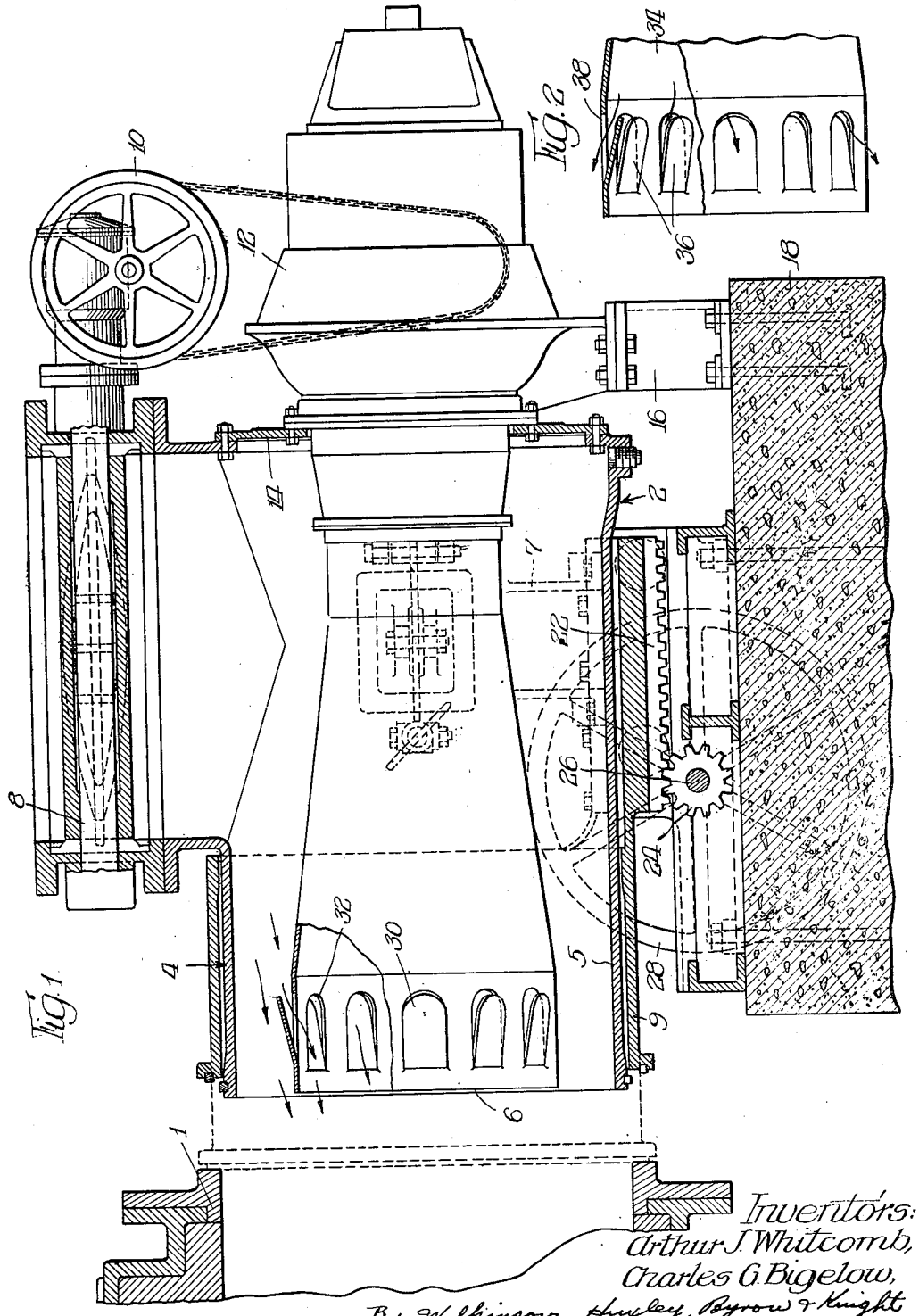
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BURNER

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Inventors:
Arthur J. Whitcomb,
Charles G. Bigelow,
By Wilkinson, Huxley, Byrow & Knight
Attys.

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BURNER

Arthur J. Whitcomb and Charles G. Bigelow, Chicago, Ill., assignors to Freyn Engineering Company, Chicago, Ill., a corporation of Maine

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The present invention relates to burners and more in particular to means for causing an admixture of combustible fluids used in conjunction therewith.

Among the objects of the present invention is to provide novel means in a pressure burner adapted to effect an admixture of fluids prior to their entrance into a combustion chamber thereof.

Another object of the present invention is to provide novel means including spaced conduits for the passage of fluids therethrough, having novel means associated therewith for deflecting fluid from one of the conduits into the other.

More particularly, the invention contemplates the idea of providing novel means associated with one of the conduits for deflecting a portion of the fluid passing through one of the conduits into the other conduit to thereby cause an admixing of these fluids prior to their entry into the combustion chamber of the pressure burner.

The present invention comprehends the idea of providing coaxially arranged nozzles adapted to be used in conjunction with a combustion chamber of a pressure burner, one of these nozzles being formed with openings communicating with the other of the nozzles and with which means is provided for deflecting fluid from one of the nozzles into the other.

More particularly, the present invention contemplates the idea of providing one of these concentrically arranged nozzles with openings formed by struck-out portions which extend laterally of the nozzle for deflecting fluid passing through one of the nozzles into the other of the nozzles.

Another object within the purview of the present invention is to provide a nozzle in which the openings are formed with struck-out portions adapted to be bent into various lateral positions to thereby adjust or regulate the quantities of fluid being deflected from one of the nozzles into the other.

Other objects, features, capabilities and advantages are comprehended by the invention, as will later appear and as are inherently possessed thereby.

Referring to the drawing:

Figure 1 is a fragmentary view in vertical cross section of an embodiment made in accordance with the present invention; and

Figure 2 is a fragmentary view in side elevation with parts broken away to disclose more in detail an alternative construction for a nozzle made in accordance with the present invention.

Referring now more in detail to the drawing, an embodiment of the present invention is disclosed in connection with a pressure burner provided with a combustion chamber which is formed with an inlet 1, means generally referred to by the numeral 2 being shown in association with this pressure burner for directing a combustible mixture of fluids or gases through the inlet 1 and into the combustion chamber. Such means is disclosed as comprising an outer nozzle or conduit 4 and an inner nozzle or conduit 6, the outer nozzle 4 being in communication, by means of suitable valve mechanism and conduit generally referred to as 8, with a source of gas or some other combustible fluid. The valve means for controlling the flow of this combustible fluid through the nozzle 4 is controlled by way of suitable mechanism, generally referred to as 10.

The innermost nozzle 6 is substantially frusto-conical in shape and communicates with a conduit 12 protruding through a closure member 14 removably secured to the outer nozzle 4, this conduit 12 being further supported upon the supports 16 associated with a suitable foundation 18. The conduit 12 communicates with a blower unit or mechanism adapted to supply a fluid, such as air, under pressure to the nozzle 6. As clearly shown in the drawing, the outer nozzle includes a stationary tubular member 5 mounted, as by means of supporting members 7, upon the foundation 18, and having its end normally in spaced relation to the inlet 1 and a slidable sleeve 9 movable relative to the member 5 into association with the inlet 1. The outer sleeve 9 for the nozzle 4 may be readily moved into association with the inlet 1 as by means of a rack 22 meshing with a gear 24 mounted upon a shaft 26 which may be readily rotated as by means of a hand wheel 28 so that the nozzle 4 is in direct communication with the combustion chamber by way of the inlet 1.

The present invention is primarily concerned with the construction of the innermost nozzle 6, whereby fluid passing through either the nozzle 6 or nozzle 4 may be deflected into the other of the nozzles. In Figure 1 of the drawing, this nozzle 6 is shown as being preferably formed of heavy gauge sheet metal provided with a plurality of struck-out portions 30 to provide a plurality of openings 32 adjacent the larger end of the nozzle 6 whereby fluid passing through the nozzle 4 may be deflected through the openings 32 and into the passageway of the nozzle 6. As clearly shown in this figure, these struck-out portions 30 extend

laterally and outwardly into the nozzle 4 and are inclined or angularly disposed in relation to the longitudinal axis of this nozzle 6 whereby this deflection of the fluid from the nozzle 4 may be effected. As will be readily appreciated, these struck-out portions 30 may be bent as desired into any angular position in respect to the longitudinal axis of the nozzle 6 for varying the quantity of fluid which is to be deflected from the outer nozzle 4 into the nozzle 6. It will also be clearly apparent that fluids passing through the nozzles 4 and 6 are premixed prior to their entry into the combustion chamber of the pressure burner, thereby resulting in smoother combustion as well as resulting in a shorter gas flame.

In Figure 2 of the drawing, the nozzle 34, which may be used in conjunction with the nozzle 4 in the same manner as previously described, is of substantially the same shape and construction as the nozzle 6 and is formed with a plurality of struck-out portions 36 which may be bent inwardly as shown to provide a plurality of openings 38, the inward and angular disposition of these struck-out portions 36 causing a deflection of the fluid passing through the nozzle 34 into an outer or concentrically arranged nozzle corresponding to the nozzle 4. As in the previously described embodiment, the nozzle 34 may be formed of heavy gauge sheet metal and the struck-out portions 36 may be provided adjacent the large end thereof, and may be bent into any desired position for controlling or adjusting the amount of fluid which is to be deflected from the nozzle 34 through the openings 38 and into the outer concentrically arranged nozzle.

While we have herein described and upon the drawing shown an illustrative embodiment of the invention, it is to be understood that the invention is not limited thereto but may comprehend other constructions, arrangements of parts, details and features without departing from the spirit of the invention.

We claim:

1. In a pressure burner or the like, the combination of a combustion chamber, nozzles communicating therewith for passage of fluids, one of said nozzles enclosing the other, the innermost of said nozzles being provided with openings, and deflecting means extending from said last named nozzle at said openings toward the fluid entering ends of said nozzles for deflecting fluid from one of said nozzles into the other whereby said fluids are mixed prior to entry thereof into said chamber, said means being adjustable inwardly and outwardly of their corresponding nozzle for adjusting flow of fluid selectably from one nozzle to the other.

2. In a pressure burner or the like, the combination of a combustion chamber, nozzles communicating therewith for passage of fluids, one of said nozzles enclosing the other, the innermost of said nozzles having struck-out portions providing openings, said portions being adapted to be bent laterally into any desired position toward the fluid entering ends of said nozzles, either inwardly or outwardly of said innermost nozzle for deflecting fluid selectably from either of said nozzles into the other.

3. In a pressure burner or the like, the combination of a combustion chamber, coaxially arranged nozzles communicating therewith for passage of fluids, the innermost of said nozzles being substantially frusto-conical in shape and having openings adjacent to the larger end thereof, and deflecting means extending from said last named nozzle at said openings toward the fluid entering ends of said nozzles for deflecting fluid from one of said nozzles into the other whereby said fluids are mixed prior to entry thereof into said chamber.

4. In a pressure burner or the like, the combination of a combustion chamber, coaxially arranged nozzles communicating therewith for passage of fluids, the innermost of said nozzles being substantially frusto-conical in shape and having openings adjacent to the larger end thereof, and deflecting means extending from said last named nozzle at said openings toward the fluid entering ends of said nozzles for deflecting fluid from one of said nozzles into the other whereby said fluids are mixed prior to entry thereof into said chamber, said means being adjustable for adjusting flow of fluid from one nozzle to the other.

5. In a pressure burner or the like, the combination of a combustion chamber, coaxially arranged nozzles communicating therewith for passage of fluids, the innermost of said nozzles being substantially frusto-conical in shape and having openings adjacent to the larger end thereof, said last named nozzle having members extending laterally therefrom and adjacent said openings toward the fluid entering ends of said nozzles for deflecting fluid from one of said nozzles into the other whereby said fluids are mixed prior to entry thereof into said chamber.

6. In a pressure burner or the like, the combination of a combustion chamber, coaxially arranged nozzles communicating therewith for passage of fluids, the innermost of said nozzles being substantially frusto-conical in shape and having openings adjacent to the larger end thereof, said last named nozzle having struck-out portions providing openings, said portions being adapted to be bent laterally into any desired position toward the fluid entering ends of said nozzles for deflecting fluid from one of said nozzles into the other whereby said fluids are mixed prior to entry thereof into said chamber.

ARTHUR J. WHITCOMB.
CHARLES G. BIGELOW.