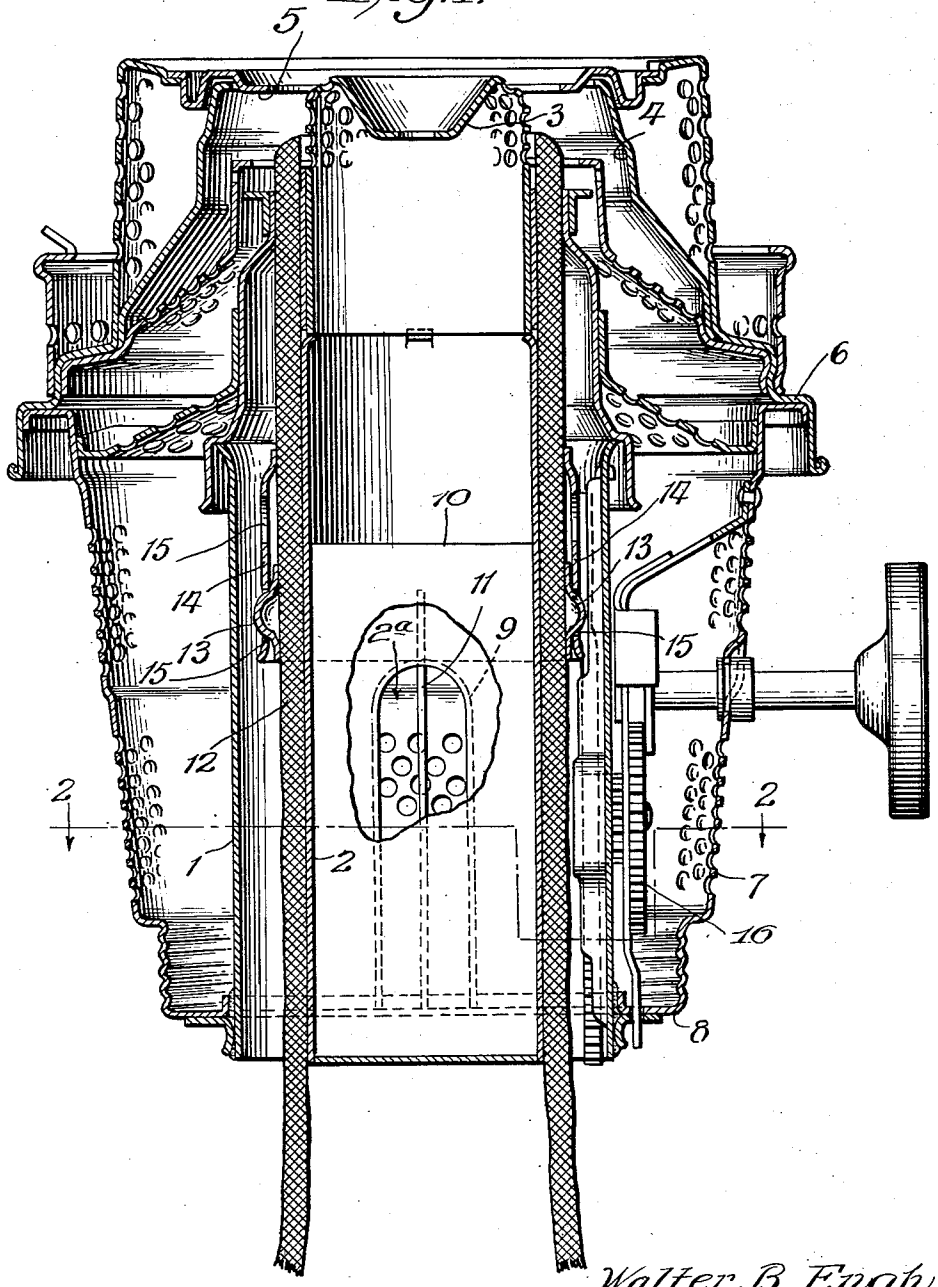
May 2, 1933. W. B. ENGH ET AL 1,906,254

SIDE DRAFT BURNER

Filed Feb. 27, 1931 2 Sheets-Sheet 1

Fig. 1.



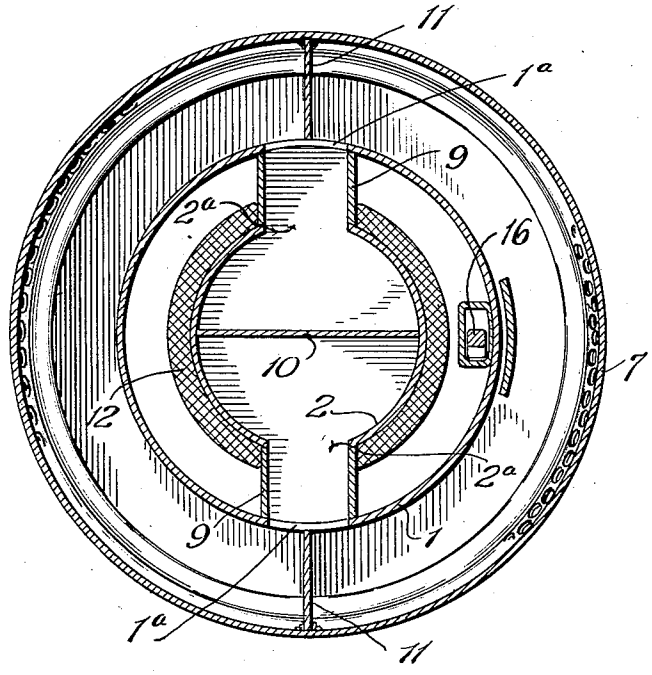
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Fig. 2.



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UNITED STATES PATENT OFFICE

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SIDE DRAFT BURNER

Application filed February 27, 1931. Serial No. 518,692.

The invention relates to blue-flame burners of the type, known as side-draft burners, wherein air is laterally admitted to the inside of a circular wick through a passage in the burner instead of through a duct extending upward through the reservoir which supplies fuel to said wick, and the object of the invention is to equip that type of burners with means whereby adequate quantities of air will be uniformly supplied to the interior of the flame.

The usual defect of a side-draft burner, is the weakness of the air introduced through the central tube thereof, the air passages leading to that tube being of such character as to produce a resistance which weakens the air introduction, and appreciably reduces the efficiency of the burner.

The new burner, herein described, is so constructed as to overcome this defect. It is provided with diametrically-opposed and relatively large side-draft ports, and with a short vertical vane, centrally disposed within the central air tube thereof, against which the opposite air currents, flowing through said ports, respectively will impinge before they pass to the upper portion of said central air tube, the object of said vane being to avoid the resistance produced by the direct impingement of the entering air currents upon each other.

Although a blue-flame burner thus equipped with opposite side-draft ports and with a vane disposed therebetween was efficient in that it supplied an adequate volume of air to the interior of the flame, said flame was undesirably affected by external drafts of air. After much experimentation, this "sensitiveness" of the burner was overcome by placing a radially-disposed vane directly in front of the approximate center of each side-draft port. These radially-disposed vanes stabilized the operation of the burner, without diminishing the volume of the interiorly supplied air.

The invention will best be understood if reference be had to the accompanying drawings, in which—

Figure 1 is a vertical sectional view of a known type of burner, equipped with the new devices hereinbefore described;

Figure 2 is a sectional view of said burner taken on the line 2—2 of Figure 1.

The burner has outer and inner wick tubes 1 and 2, a spreader 3 for directing air to the interior of the annular flame, a cone 4, 5 for directing air to the exterior of that flame, a gallery 6, and a perforated basket 7 to the lower end 8 of which the outer wick tube 1 is secured.

The outer wick tube 1 and the inner wick tube 2, respectively are provided on opposite sides with diametrically-disposed openings 1*a*, 2*a*, coinciding with the walls 9 of the ports which lead the air into the central air tube 2.

Within the inner air tube 2 is a vane 10 extending upward from the lower end of said air tube to, preferably, a point above the walls 9 of the side air ports. This vane, as already indicated, by facilitating the upward flow of the currents of air entering said air ports, ensures an adequate supply of air to the interior of the burner flame.

Within the basket 7 are vertical vanes 11 that extend to, and divide the openings 1*a* of the outer wick tube 1. These vanes, as hereinbefore described, prevent external currents of air from affecting the stability of the burner flame. A lighted burner, equipped with these vanes 11, has been subjected to the blast of a powerful fan without extinguishing the burner flame, or causing the deposition of carbon on the mantle.

These several devices may be disposed at any suitable altitude relative to said inner air tube 2, and said inner air tube may be of any desired length, provided it has openings, such as the openings 2*a*, through which air may pass to the opposite sides of the vane 10.

Having thus described our invention, what we claim is:

1. A side-draft burner of the blue-flame type, including a side air port, a central air tube into which said air port leads, and a vertical vane disposed outside of and extending to said air port, to thereby protect the burner flame from external drafts of air.

2. A side-draft burner of the blue-flame type, including opposed air ports, a central air tube into which said air ports lead, and vertical vanes disposed outside of and extending to said air ports.

3. A side-draft burner of the blue-flame type, including opposed air ports, a central air tube into which said air ports lead, a vertical vane in said central air tube against which air entering through said air ports may impinge, and vertical vanes disposed outside of and extending to said air ports.

4. A side-draft burner of the blue-flame type, including a perforated basket, a side air port, a central air tube into which said air port leads, and a vertical vane disposed within said perforated basket and extending to said air port, to thereby protect the burner flame from external drafts of air.

In testimony whereof we affix our signatures.

WALTER B. ENGH.
CORTLAND W. DAVIS.