

Nov. 20, 1928.

1,692,382

M. NUSS

GAS BURNER

Filed June 15, 1926

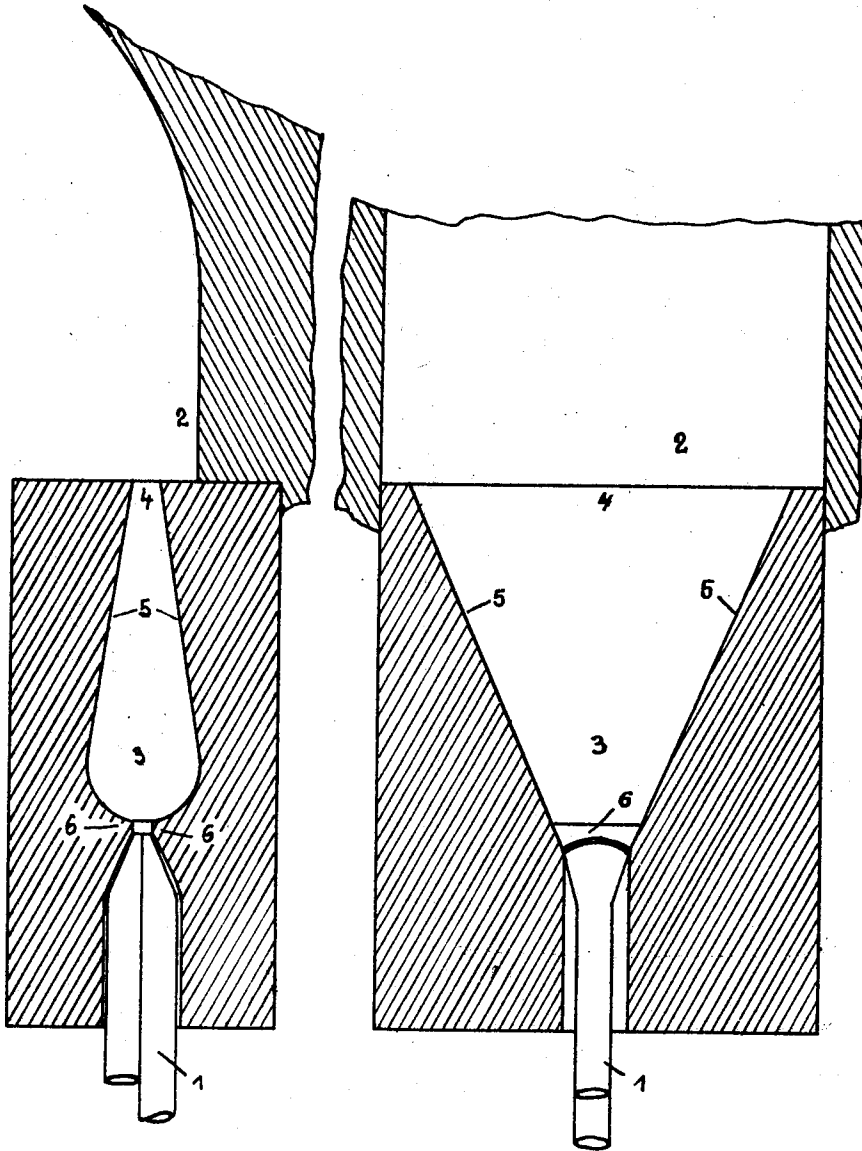


Fig. 1.

Fig. 2.

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UNITED STATES PATENT OFFICE.

MAX NUSS, OF DARMSTADT, GERMANY.

GAS BURNER.

Application filed June 15, 1926, Serial No. 116,244, and in Germany January 19, 1925.

This invention relates to improvements in gas burners which by reason of the increased initial temperature secures not only an improvement in the process of combustion but also an improvement in the operation as regards the transference of heat to the objects to be heated, so that the time of heating is appreciably shortened.

The gas burner is adapted to be directly applied to the articles to be heated and moreover such gas burner even burns under water, so long as the pressure of the water is not higher than the pressure of the gas at the burners.

According to the general principle of my invention a combustion chamber is provided between the burner and the firing chamber. This combustion chamber is provided with a restricted orifice with a broad slotted or slit opening. The inlet for fuel or mixture is also appropriately formed as a broad slit.

In the accompanying drawings

Figure 1 is a vertical section through the axis of a gas burner in accordance with my invention on line $x-x$ of Figure 2.

Figure 2 is the same gas burner in a vertical section turned 90° with reference to Figure 1 on the line $y-y$.

In order to obtain a high initial temperature there is interposed between the opening of the burner 1 and the firing chamber 2 a combustion chamber 3 having a restricted opening 4 formed to a broad slotted or slit opening. By this construction the primary heat produced by the flame is thrown back into the interior of the flame and the cold portion of the flame is restricted. It is

therefore requisite to enlarge the reflecting surfaces 5 to a practical maximum of reflecting surfaces in conjunction with a practical minimum of the volume of the heating flame. For this purpose the combustion chamber is provided with a restricted orifice 4 in the form of a broad slotted opening or slit and also the inlets for fuel or mixture and the fuel and air are formed as broad slits or slotted openings. In this manner the density of the flame and the kinetic energy of the particles thereof is increased and the initial temperature raised. The energy of the motion of the glowing mass is thereby directly applied to the objects to be heated as such motion obtains an extra final velocity.

The iron inlets for fuel and air or mixture in all cases are protected by transverse portions 6 of refractory material from the reflected heat.

Having thus particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

In apparatus of the class described, a structure providing a firing chamber, a gas burner, a combustion chamber between the burner and the firing chamber, said combustion chamber having a restricted orifice formed to a broad slotted opening and inlets for fuel and air formed as broad slits and provided with transverse protecting portions of refractory material.

In testimony whereof I have hereunto signed my name.

MAX NUSS.