

W. E. McCOY.

BURNER.

APPLICATION FILED JUNE 15, 1910.

1,022,861.

Patented Apr. 9, 1912.

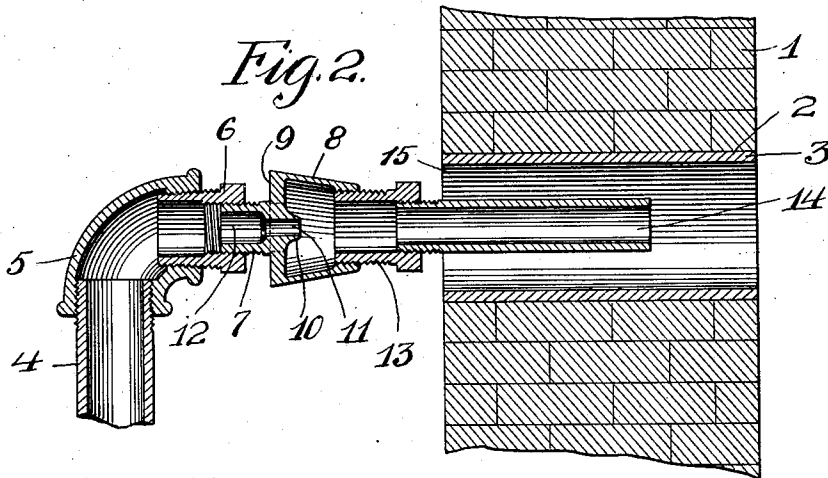
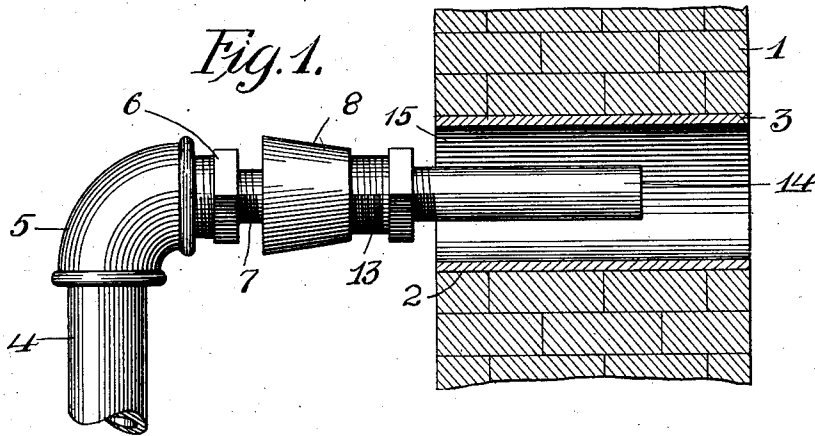
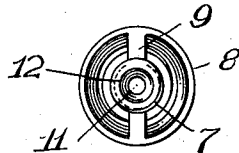


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLARD E. McCOY, OF EAST LIVERPOOL, OHIO.

BURNER.

1,022,861.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLARD E. McCOY, a citizen of the United States of America, residing at East Liverpool, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Burners, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to burners specially designed for kilns, and the invention aims to provide a burner that will produce a high degree of heat with a small expenditure of gas.

15 The above object is attained by a mechanical construction consisting of comparatively few parts that are simple, durable, easy to assemble and inexpensive to manufacture, and the mechanical construction will be hereinafter specifically described and then claimed.

20 Reference will now be had to the drawing forming a part of this specification, wherein there is illustrated a preferred embodiment of the invention, but it is to be understood that the structural elements thereof are susceptible to such changes as fall within the scope of the appended claim.

25 In the drawing:—Figure 1 is an elevation of the burner, Fig. 2 is a longitudinal sectional view of the same, and Fig. 3 is an end view of the primary mixer.

30 The reference numeral 1 denotes the wall of a kiln, oven or structure in which a high degree of heat is to be maintained. The wall 1 is provided with a cylindrical opening 2 and in the opening 2 is mounted an air inlet pipe 3, constituting a secondary 35 air mixer.

40 4 denotes a gas supply pipe adjacent to the outer side of the wall 1 and connected to the upper end of the pipe 4 is an elbow 5, and screwed into the end of the elbow 5 is a reduction plug 6 and screwed into the 45 end of said plug is the reduced rearward extension 7 of a primary mixer. This mixer comprises a frusto-conically shaped shell 8 having the large end thereof provided with a spider 9 which is formed integral with the 50 extension 7. The forward end of the extension 7 terminates in a nipple 10 within the shell 8, and the opening 11 of said nipple is of a less diameter than the open-

ing 12 of the extension 7, the opening 11 55 of the nipple 10 being approximately one-third the diameter of the supply pipe 4. Screwed in the small end of the shell 8 is a sleeve 13 and screwed into the forward end of this sleeve is a burner pipe 14, said pipe 60 extending approximately half way into the pipe 3 and approximately one-third the diameter thereof, thereby providing an annular air inlet space 15 at the outer end of the pipe 3.

65 It is through the medium of the nipple 10 that the gas is admitted to the sleeve 13 in the form of a jet under exceedingly high pressure and this jet produces a suction of air in the large end of the shell 8 that causes 70 the air to thoroughly commingle with the jet of gas as it enters the burner pipe 14. The gas from the end of the pipe 14 produces a suction of air in the outer end of the pipe 3, consequently there is a second 75 commingling of air and gas at the inner end of the pipe 3. It is through the medium of the reducing elements of the burner that sufficient pressure is produced whereby a large quantity of air can be commingled 80 with the gas, it being necessary to introduce air first at the primary mixer then at the secondary mixer in order to insure a thorough commingling of the air and gas before 85 reaching the point of ignition.

What I claim is:—

A burner comprising an elbow for connection to a gas supply pipe, a cylindrical reducing plug connected to the elbow and having interior threads, a frusto-conically 90 shaped hollow member having its enlarged end provided with an integral spider and constituting a primary air mixer, said spider having an inwardly projecting nip- 95 ple and a centrally disposed opening communicating with the nipple, said member further including a rearwardly extending, hollow, annular element integral with said spider and communicating with said opening, said element having interior threads 100 engaging with the interior threads of the reducing plug, said member provided at its inner end with interior threads, said opening being of less diameter than the inner diameter of said element, an exteriorly 105 and interiorly threaded inwardly extending sleeve, said sleeve at its outer end engaging the threads of said member, a burner

pipe having its outer end formed with peripheral threads for engagement with the interior threads of said sleeve, and a pipe of relatively large diameter surrounding
5 and projecting from the free end of said burner pipe and constituting a secondary air mixer.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLARD E. McCOY.

Witnesses:

S. J. ALLISON,

STEPHEN HAGUE.

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