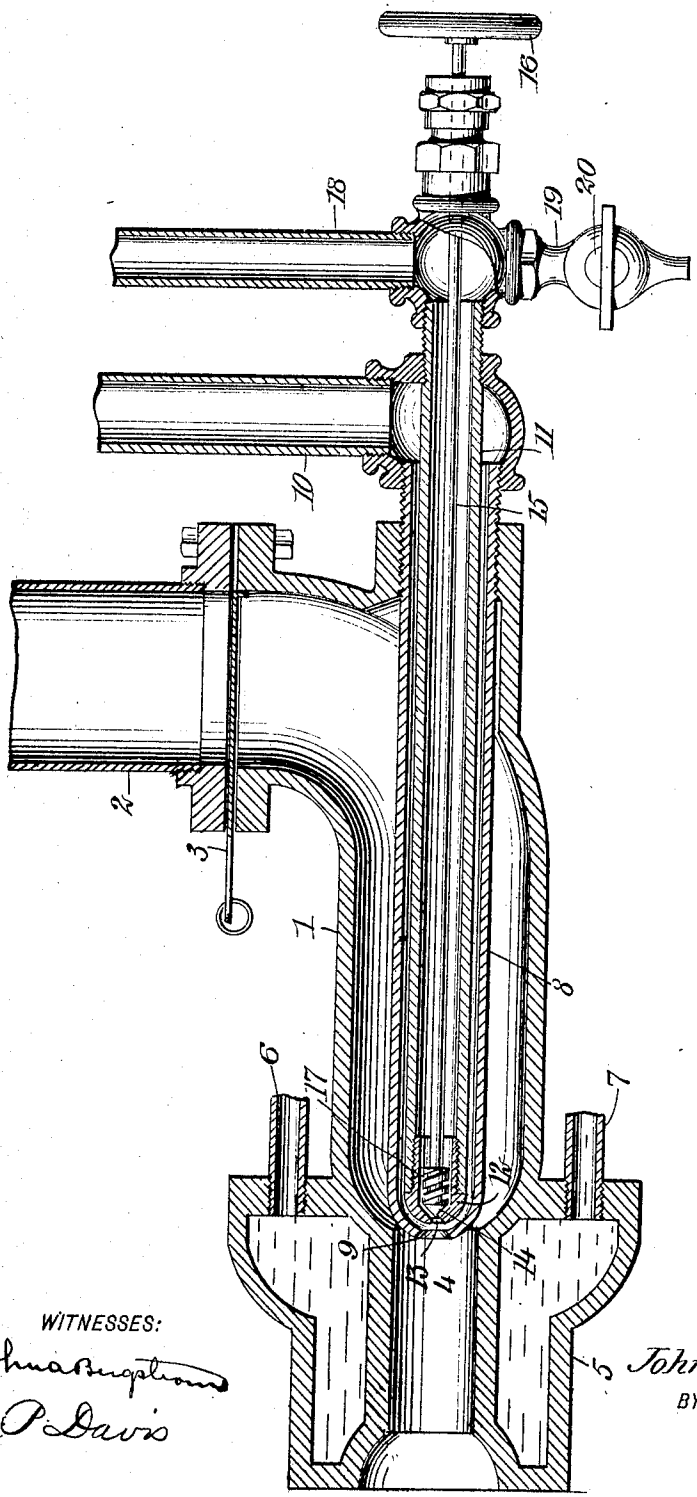
No. 872,288. PATENTED NOV. 26, 1907.

J. H. KOONS.

LIQUID FUEL BURNER.

APPLICATION FILED JAN. 4, 1907.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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LIQUID-FUEL BURNER.

No. 872,288. Specification of Letters Patent. Patented Nov. 26, 1907.

Application filed January 4, 1907. Serial No. 350,712.

To all whom it may concern:

Be it known that I, JOHN H. KOONS, a citizen of the United States, and a resident of Anderson, in the county of Madison and State of Indiana, have invented a new and Improved Liquid-Fuel Burner, of which the following is a full, clear, and exact description.

This invention relates to improvements in burners for gas produced by the admixture of oil or denaturized alcohol, with low pressure air and high pressure air or steam, the object being to provide a burner with which an intense heat may be obtained, and particularly adapted for use in connection with milling or blast furnaces.

I will describe a gas burner embodying my invention, and then point out the novel features in the appended claim.

Reference is to be had to the accompanying drawing forming a part of this specification, and to the characters of reference marked thereon.

The figure of the drawing is a longitudinal section of a gas burner embodying my invention.

The burner comprises a tubular casing or pipe 1 for receiving air at atmospheric or low pressure from a pipe 2, and this air-inlet is controlled by a slide valve 3. The casing or pipe 1 is reduced at its end, forming a mixing chamber 4, surrounding which is a water jacket 5 having an inlet-pipe 6 and an outlet-pipe 7.

The circulation of water around the outlet of the burner or mixing chamber will prevent the burning out of the device.

Extended through the casing or pipe 1 is a tube for the passage of air under high pressure, or for the passage of steam, as may be desired. This tube 8 has a restricted outlet 9, and is supplied with the high-pressure medium through a pipe 10.

Arranged within the tube 8 is an oil or alcohol supply pipe or tube 11, having a nozzle tube 12 provided with a restricted outlet 13, the said outlet being regulated by a valve 14, the stem 15 of which is projected outward through the end of said pipe or tube 11 and provided with a handpiece 16. The valve 14 is provided with an annular spirally-disposed channel 17, which will cause a spiral action of the oil or alcohol passing through the tube so that the oil or alcohol will thoroughly mix with the air or steam.

The oil or alcohol is admitted to the pipe 11 through a pipe 18, and below this pipe 18 is a nipple 19 provided with a valve 20, and through this nipple 19 oil or alcohol may be discharged to test its quality or density.

In operation, the oil or alcohol discharged through the opening 13 will be thoroughly mixed with the low-pressure air and the high-pressure air or steam, and when ignited will produce an intense flame.

Having thus described my invention I claim as new and desire to secure by Letters Patent:—

A burner of the character described, comprising a tubular casing having one end reduced to form a mixing chamber and provided with a water jacket surrounding the same, the other end of the casing having a lateral valved low pressure air inlet, a high pressure pipe secured in the casing and having its inner end apertured and arranged adjacent to the reduced end of the casing, the other end of the pipe extending out through the end of the casing opposite its reduced end and having a lateral inlet, a liquid fuel pipe secured in the high pressure pipe and extending out through the outer end of the same and having a lateral inlet, a nozzle on the inner end of the fuel pipe, said nozzle being adjacent to the aperture of the high pressure pipe, and a spirally grooved valve in the nozzle and having its stem extending out through said fuel pipe.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN H. KOONS.

Witnesses:
W. A. HOFFMAN,
J. G. KECKLER.