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OXIDIZING DEVICE FOR SULPHUR BURNERS.

APPLICATION FILED NOV. 23, 1921.

1,410,061. Patented Mar. 21, 1922.

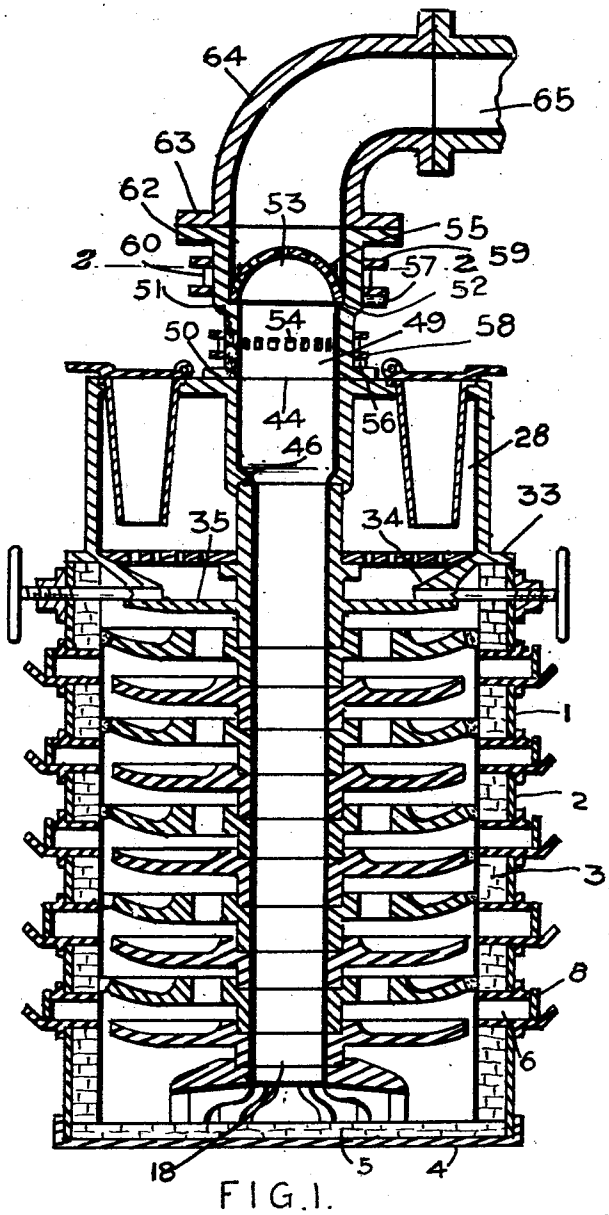


FIG. 1.

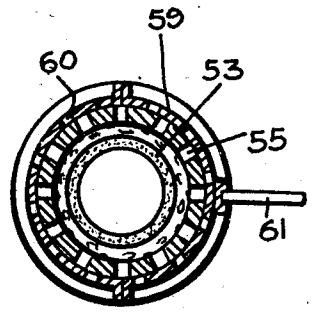


FIG. 2.

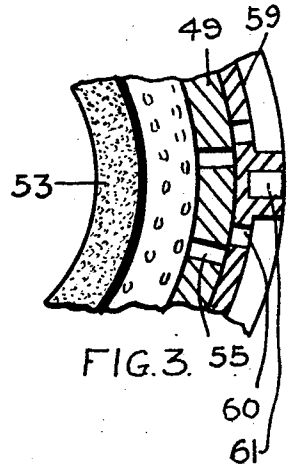


FIG. 3.

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OXIDIZING DEVICE FOR SULPHUR BURNERS.

1,410,061. Specification of Letters Patent. Patented Mar. 21, 1922.

Original application filed June 17, 1921, Serial No. 478,394. Divided and this application filed November 23, 1921. Serial No. 517,342.

To all whom it may concern:

Be it known that I, ALBERT GUSTAV HINZKE, a citizen of the United States, and a resident of the city of Port Arthur, in the District of Thunder Bay, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Oxidizing Devices for Sulphur Burners, forming a divisional application of United States application, Serial No. 478,394, filed June 17, 1921, and of which the following is the specification.

My invention relates to improvements in oxidizing devices for sulphur burners and the object of the invention is to devise simple means whereby the gas discharged from the burner will be intimately combined with air so as to form a completely combustible gas and it consists essentially of the arrangement and construction of parts as hereinafter more particularly explained.

Fig. 1 is a vertical sectional view through the sulphur burner intermediately broken away of its height and showing my oxidizing device applied thereto.

Fig. 2 is a sectional view on line 2—2, Fig. 1.

Fig. 3 is a fragmentary enlarged detail of the portion of the parts shown in Fig. 2.

In the drawing like characters of reference indicate corresponding parts in each figure.

1 is the body or shell of a burner which is composed of a sheet metal wall 2 and a brick lining 3, the bottom being formed also by a sheet metal wall 4 which is riveted or otherwise suitably secured to the wall 2 and is also provided with a brick lining 5. 6 are a series of openings formed in the wall of the shell or body 1 provided with suitable doors 8. 18 is the outlet duct leading from a point in proximity to the bottom of the burner 1. 28 is the melting kettle which is carried upon the open part of the burner body 1. The lower edge of the melting kettle is provided with a flange 33 which rests and is secured to the top wall of the body 1. The bottom of the kettle 28 converges downwardly at 34 to the horizontal wall 35 which forms the kettle bottom and which is integral with the upper portion of the duct 18.

44 is an orifice which is formed in the centre of the top of the kettle 28 and from which depends the upper portion of the duct 18 provided at its lower end with a surrounding groove 46 into which the upper edge of the lower portion of the duct 18 fits. 49 is a pipe section provided at its lower end with an outwardly extending flange 50 resting upon the kettle 28 so as to register with the central opening 44 of the melting kettle 28. The upper end of the pipe 49 is enlarged at 51 forming a shoulder 52 on which rests a perforated semi-spherical dome 53. 54 is an annular series of port openings located in the pipe section 49 below the shoulder 52. 55 is a similar series of port openings formed above the shoulder 52 and also above the perforated dome 53. 56 are rollers which are revolvably carried upon a pipe 49 to extend radially therefrom below the port openings 54. 57 are similar rollers located below the port openings 55.

58 and 59 are rings carried respectively upon the rollers 56 and 57, each ring being provided with openings 60 designed to be carried into and out of a registering position by the handle 61. The upper end of the pipe 49 is provided with an annular flange 62 to which is secured the flange 63 of the elbow 64. It will be noted that the elbow 64 is gradually contracted towards its outlet end to which is secured the outlet discharge pipe 65.

The burner is started and operated in the manner disclosed in my co-pending application to which this present application forms a division, the gases passing off from the burner through the outlet duct 18 and through the perforated dome 53 into the elbow 60 which finally discharges the gases into the outlet pipe 65 leading to a suitable absorbing system.

When the hot gases enter the oxidizing chamber such gases are only partly combusted and oxidized and it is in this oxidizing chamber formed by the pipe enlargement 51 and the perforated dome 53 that the gases receive their final treatment. In opening the lower row of port openings 54 which are located beneath a perforated dome 53, enough air is let in and the air and gas undergo a thorough mixing in passing through the perforated dome causing final combustion and oxidation of the gases. The upper row of port openings located above the perforated dome are only open slightly in order to observe the colour of the flame.

By the above described means the gases

are thoroughly mixed with air so that a complete combustion is provided.

What I claim as my invention is:

1. In a sulphur burner, the combination with the outlet duct, having air ports formed therein, of means for controlling the flow of air through such ports, and a perforated dome fitting within the outlet duct above the ports.

2. In a sulphur burner, the combination with the outlet duct, having air ports formed therein, and an enlargement forming an annular shoulder located above the ports, of means for controlling the flow of air through such ports, and a perforated dome fitting within the outlet duct and resting on its edge on the aforesaid annular shoulder.

3. In a sulphur burner, the combination with the outlet duct, having air ports formed therein, of an annular member surrounding the duct, and having openings adapted to be brought into and out of a registering position with the aforesaid port openings, rollers carried by the outlet duct in a radial position and upon which the annular member is carried, and means located above the ports for mixing the gases passing from the outlet with the air passing through the ports.

4. In a sulphur burner, the combination with the outlet duct, having air ports formed therein, of an annular member surrounding the duct and having openings adapted to be brought into and out of a registering position with the aforesaid port openings, rollers carried by the outlet duct in a radial position and upon which the annular member is carried, and a perforated dome fitting within the outlet duct above the ports.

ALBERT GUSTAV HINZKE.