

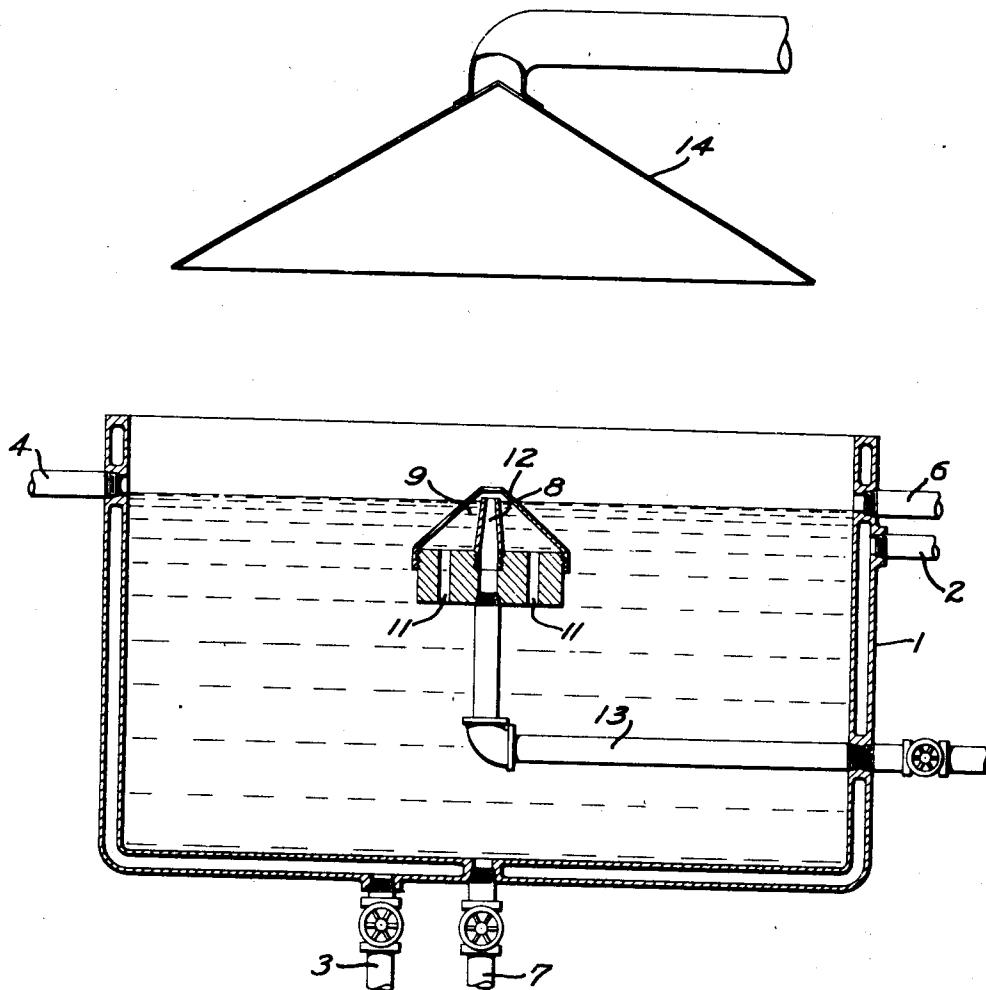
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METHOD AND APPARATUS FOR ATOMIZING SULPHUR

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METHOD AND APPARATUS FOR ATOMIZING SULPHUR.

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Our invention relates to an apparatus and method for atomizing sulphur.

One of the objects of the invention is to spray molten sulphur thru an atomizer in a manner which will prevent the freezing of the sulphur around the nozzle tip of the atomizer.

Another object of the invention is to maintain a bath of molten sulphur about the atomizer so as to prevent the chilling thereof.

Another object of the invention is to maintain the sulphur bath at a level approximately even with the tip of the atomizer.

The invention possesses many other objects and valuable features, some of which will be set forth in the following description of the invention which is illustrated in the drawings forming part of the specification. It is to be understood that we do not limit ourselves to the showing made by the said description and drawings, as we may adopt varying forms of our invention within the scope of the claims.

The figure is a vertical sectional view of the tank in which the molten sulphur is held and from which it is sprayed.

Efforts have been made to atomize molten sulphur by spraying it thru a nozzle but the difficulty in this process is that upon the sudden expansion of the sulphur, it becomes chilled and solidifies around the tip of the nozzle, thus clogging the nozzle. This difficulty is overcome by the method described in our invention.

In terms of broad inclusion, our invention comprises the immersion of an atomizer within a bath of molten sulphur with the tip of the atomizer approximately even with the level of the sulphur bath, which is always maintained at the same level within a tank. Air from an outside source is forced thru the sulphur bath and thru the spraying chamber of the atomizer. The air which is under pressure draws sulphur from the bath into the spraying chamber from which it escapes at a high velocity and due to the sudden expansion, the sulphur is atomized. The particular type of atomizer is not a part of the present invention, since any atomizer may be used.

In detail, our invention comprises a steam jacketed tank 1, having a pipe 2, for the in-

troduction of steam into the jacket and which is located near the top of the tank, and a steam outlet and drain pipe 3 located in the bottom of the tank for draining the condensate and steam from the jacket. A sulphur inlet pipe 4 for the introduction of molten sulphur and a sulphur outlet pipe 6 pass thru the walls of the tank near the top thereof and at the same distance from the bottom of the tank, so as to maintain the molten sulphur within the tank at the same level. Circulation of sulphur thru the inlet and outlet pipes of the tank is maintained at a rate which is about the same at which the sulphur is sprayed from the tank. Drain pipes 7 are located in the bottom of the tank for permitting the draining thereof.

Immersed within the bath of molten sulphur is the atomizer 8, which comprises a spraying chamber 9 with passages 11 leading into the bath of sulphur, and the air nozzle 12. The tip of the atomizer is approximately even with the surface of the bath, preferably a trifle above the bath. An air pipe 13 leads from the air nozzle 12, thru the bath of sulphur and thru the tank, to an air compressor. It will be thus seen that as the air is forced thru the pipe and nozzle it draws the sulphur from the bath thru passages 11, into the spraying chamber from which it is sprayed into the atmosphere. The atomized sulphur which is in a very finely divided state is then collected by suitable collecting means 14.

The above described process may be carried on by having a plurality of atomizers within the tank.

As a result of the above recited process an atomized sulphur is produced which is much finer than the usual grade of atomized sulphur, inasmuch as it will pass thru a 300 mesh screen.

We claim:

1. A method of atomizing sulphur which comprises melting the sulphur, maintaining the sulphur in a molten mass, and at a constant surface level, spraying the sulphur at a point adjacent said surface, and utilizing the mass of molten sulphur to prevent the freezing of the sulphur being atomized and also as a source for the sulphur to be atomized.

2. The herein described apparatus for atomizing sulphur comprising a chamber, a mass of molten sulphur within the chamber,

means for maintaining the mass of sulphur at a constant level, and an atomizer immersed within the mass of molten sulphur.

3. The herein described apparatus for atomizing sulphur comprising a chamber, a mass of molten sulphur within the chamber, means for heating the sulphur, means for maintaining the sulphur at a constant level, and an atomizer immersed within the mass of molten sulphur.

4. The herein described apparatus for atomizing sulphur comprising a chamber, a mass of molten sulphur within the chamber and an atomizer immersed within the mass of molten sulphur so that the tip of the atomizer is approximately even with the level of the mass of sulphur.

5. The herein described apparatus for atomizing sulphur comprising a chamber, a

mass of molten sulphur within the chamber, means for maintaining the mass of sulphur at a constant level, and an atomizer immersed within the mass of molten sulphur so that the tip of the atomizer is approximately even with the level of the mass of sulphur.

6. An apparatus for atomizing sulphur comprising a chamber, a mass of molten sulphur within the chamber, means for heating the sulphur, means for maintaining the sulphur at a constant level, an atomizer within the mass of sulphur and an air passage leading thru the wall of the chamber and thru the bath of molten sulphur to the atomizer.

In testimony whereof, we have hereunto set our hands.

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