

March 31, 1931.

C. E. MENSING

1,798,166

BETA NAPHTHOL PELLET

Filed March 24, 1927

Fig. 1.

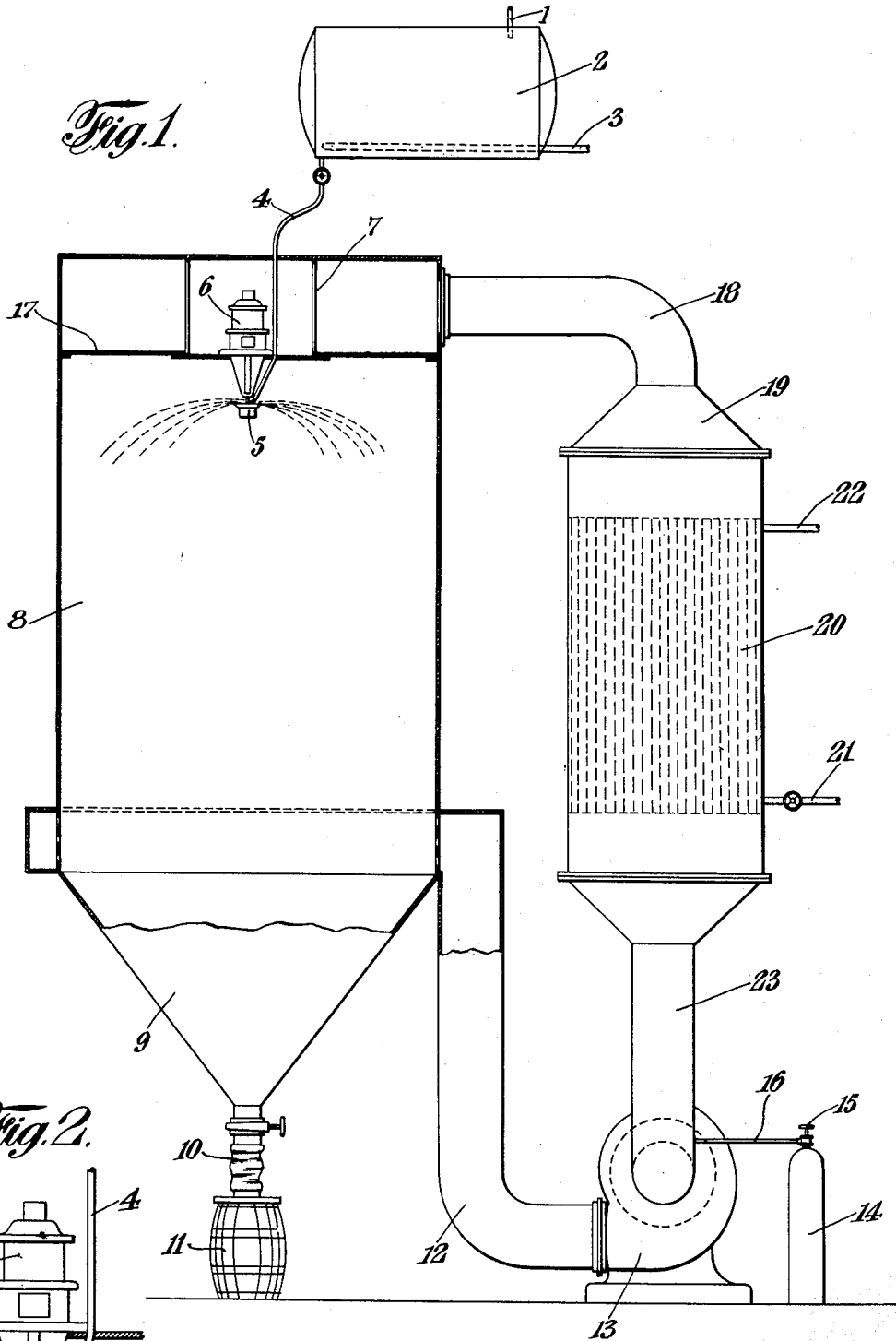
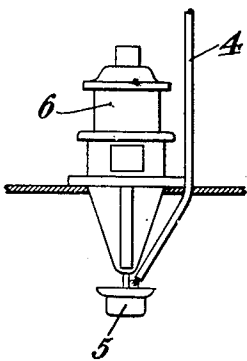


Fig. 2.



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UNITED STATES PATENT OFFICE

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BETA-NAPHTHOL PELLET

Application filed March 24, 1927. Serial No. 178,119.

My invention relates particularly to a process of spraying beta naphthol in such a manner as to secure certain advantages therefrom, and relates, also, to the sprayed beta naphthol produced therein.

The object of my invention is to provide a process for obtaining a new form of beta naphthol that is valuable commercially. One of the purposes of my invention is to convert molten beta naphthol into a finely divided spheroidal product which is substantially free from the tendency to agglomerate and cake, as, for example, when ground or flaked. A further object is to avoid deterioration of the beta naphthol which usually occurs when the latter is finely divided in the presence of air, by carrying out the process in an inert atmosphere. The deterioration of the beta naphthol is avoided thereby, both in the method of manufacture and in the subsequent storage or transportation of the beta naphthol. When beta naphthol is exposed to the air there results a very decided oxidation, resulting in a darkening in color, and the higher the temperature at which the beta naphthol is exposed to the air the faster will be the rate of deterioration due to oxidation. Therefore, in my process the oxidation, with the resultant darkening in color, is avoided. Also, by discharging the product containing the inert gas into barrels, as hereinafter indicated, the voids therein will be filled with the inert atmosphere instead of air, thus avoiding the darkening in color which would otherwise result. Again, by my process I lessen the hazards of dust explosion and resultant fire, which are common at present in the previous process of manufacturing powdered or flaked beta naphthol. Another important object of my invention is to provide a finely divided beta naphthol which will dissolve in solvents much more readily than in the case of previous finely divided beta naphthols obtained by other methods, inasmuch as in the product obtained by my

process there is not the difficulty of wetting, or the difficulty for the penetration of the liquid found in the previous products. Still another object of my invention is to avoid the losses and damage to quality present in the previous flaking processes, by providing a process in which the finely divided beta naphthol is produced in the new form referred to directly from the liquid state from which it is obtained in the process of distilling the same.

Further objects of my invention will appear from the detailed description of the same hereinafter.

While my invention is capable of being carried out in connection with many different types of apparatus I have shown only one type of apparatus for use therewith in the accompanying drawings, in which—

Figure 1 is a vertical section of an apparatus which may be used in accordance with my invention; and

Figure 2 is an enlarged detail view showing the spraying machine contained therein.

In carrying out my invention, the liquid beta naphthol may be received in the liquid form from any suitable source of supply, such, for example, as the receiver of a still, whence it may be conveyed by a pipe 1 to a supply tank 2 provided with a steam coil 3 for keeping the beta naphthol at the desired temperature to maintain the required fluidity. A valved pipe 4 is provided for drawing off the liquid beta naphthol from the tank 2 to a spraying device comprised of a rapidly spinning bowl 5 driven by an electric motor 6 located in a compartment 7 provided at the top of a spraying chamber 8. The chamber 8 has a hopper-like conical bottom 9 leading to a valved discharge pipe 10 for delivering the spheroidal particles of beta naphthol to a cask 11, or any other type of receiver, for shipment, storage, etc. Preferably an inert gas, such, for example, as carbon dioxide or nitrogen, is circulated upwardly through the

chamber 8 from a supply pipe 12 connected to the bottom of the same and having therein a fan 13 supplied with compressed gas from a bottle 14 having a valve 15 at the top thereof and a pipe 16 leading to the inlet side of the fan 13. The heated gases pass up through the top of the chamber 8 through a filtering medium 17 of cloth of fine muslin, or other suitable medium, and thence outwardly through a pipe 18 to a cooler 19 having a series of vertically arranged tubes 20 therein around which there is passed a current of cooling water from a valved inlet pipe 21, and which is discharged through an overflow pipe 22. The cooled gases are then conveyed by a pipe 23 to the above mentioned fan 13 to be recirculated in the chamber 8.

In accordance with the operation of the process in said apparatus, the liquid beta naphthol in the supply tank 2, and which is maintained as a liquid therein at a temperature of approximately 130° C., is supplied to the spraying device in which the rapidly spinning bowl 5 causes the molten beta naphthol to be thrown out by centrifugal force, in the form of a fine mist, the individual particles of which become chilled or solidified in a spheroidal shape while falling through in an atmosphere of inert gas in the chamber 8. The beta naphthol thus falls down in the hopper 9 in a fine granular form whence it may be discharged from time to time, as desired, or continuously, if desired, through the valved pipe 10 into the cask 11 or other receptacle. The inert gas in the chamber 8 becomes warm by contact with the beta naphthol, and is freed from any fine particles of beta naphthol by being passed through the filter 17, after which the gas is cooled down to a temperature preferably of 30° C. or lower, in the cooler 20, and is then recirculated by the fan 13 to the spraying chamber.

While I have described my invention above in detail I wish it to be understood that many changes may be made therein without departing from the spirit of the same.

I claim:

1. An article of manufacture comprising beta naphthol in the form of finely divided particles, substantially free from any tendency to agglomerate or cake, and which are substantially spheroidal in shape.

2. An article of manufacture comprising a very readily soluble beta naphthol in the form of finely divided particles, substantially free from any tendency to agglomerate or cake, and which are substantially spheroidal in shape.

3. An article of manufacture comprising beta naphthol in the form of finely divided particles having great resistance to deterioration due to formation in an inert gas, substantially free from any tendency to agglomerate or cake, and which are substantially spheroidal in shape.

4. An article of manufacture comprising a very readily soluble beta naphthol in the form of finely divided particles having great resistance to deterioration due to formation in an inert gas, substantially free from any tendency to agglomerate or cake, and which are substantially spheroidal in shape.

In testimony that I claim the foregoing, I have hereunto set my hand this 17th day of March, 1927.

CARL E. MENSING.