Dec. 27, 1938. N. B. BACH 2,141,371

APPARATUS FOR CLARIFYING LIQUORS CONTAINING SUSPENDED AND FLOCCULENT MATTER, SUCH AS SUGAR JUICES AND SIMILAR LIQUORS

Filed May 19, 1938 2 Sheets-Sheet 1

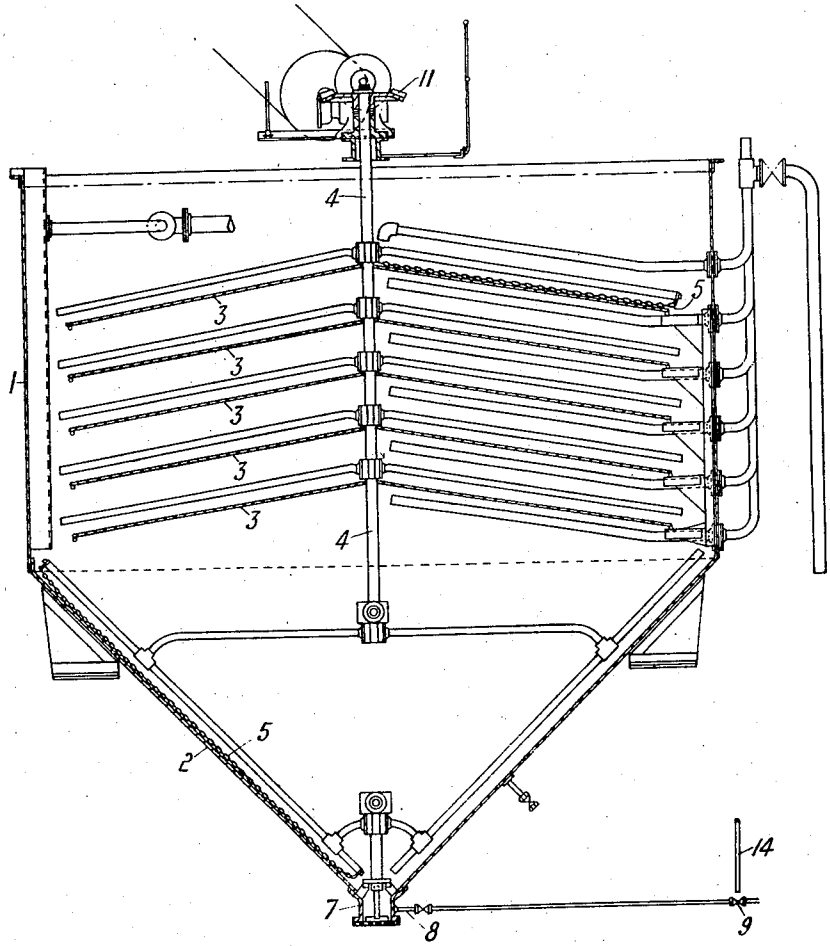


FIG. 1.

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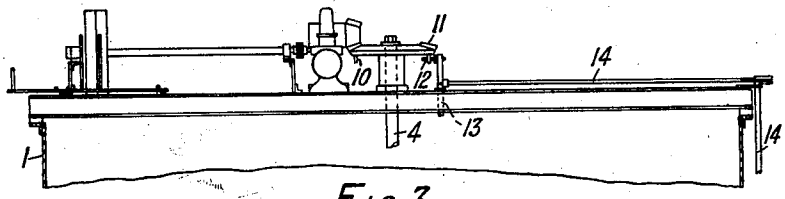


FIG. 3.

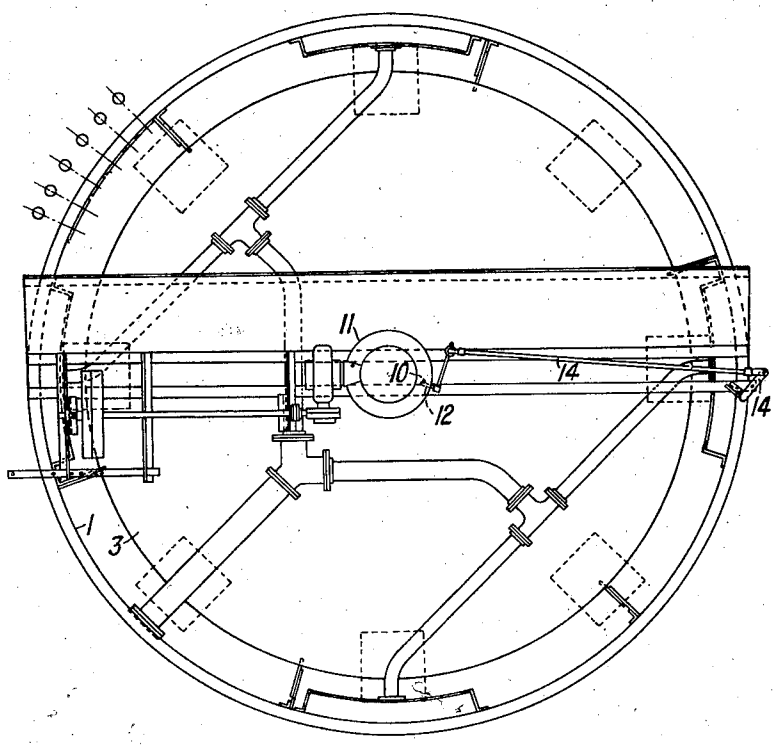


FIG. 2.

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UNITED STATES PATENT OFFICE

2,141,371

APPARATUS FOR CLARIFYING LIQUORS CONTAINING SUSPENDED AND FLOCCULENT MATTER, SUCH AS SUGAR JUICES, AND SIMILAR LIQUORS

Niels Breinholt Bach, Vestervig, Denmark

Application May 19, 1938, Serial No. 208,816
In Great Britain July 14, 1937

3 Claims. (Cl. 210—55)

This invention relates to apparatus for clarifying liquors containing suspended and flocculent matter, such as sugar juices and similar liquors, of the type including a tank of circular section having a conical base and accommodating a plurality of superposed trays penetrated by a rotary shaft disposed co-axially with the tank and carrying a plurality of scrapers which ride on the surfaces of the trays and the conical base of the tank.

In the operation of such apparatus mud accumulates at the apex of the conical base and there is a tendency for gases to be formed in such mud.

The primary object of the present invention is to provide means for dispersing the gases formed in the mud.

With this object in view, the invention consists in the incorporation in apparatus of the kind described of means for dispersing the gas present in the mud, comprising a steam nozzle directed into the tank in the region of mud accumulation, a valve interposed between the nozzle and the source of steam and means operated by the shaft for opening and closing the valve periodically whereby, in the rotation of the shaft, to introduce steam in puffs into the mud.

In the accompanying drawings which illustrate an apparatus constructed in accordance with the invention Fig. 1 is a vertical section, Fig. 2 a plan and Fig. 3 a fragmentary vertical section showing details of the valve operating mechanism.

The apparatus shown includes a cylindro-conical tank 1 having a conical base 2 and accommodating a plurality of trays 3 penetrated by a rotary shaft 4 disposed co-axially with the tank 1 and carrying a plurality of scrapers 5 which ride on the surfaces of the trays 3 and the conical base 2 of the tank 1.

For dispersing the gas present in the mud that accumulates at the apex 7 of the tank there is provided a steam nozzle 8 which is directed into the tank in the region of mud accumulation. A valve 9 is interposed between the nozzle 8 and the source of steam supply and there are provided means operated by the shaft 4 for opening and closing the valve 9 periodically, whereby, in the rotation of the shaft 4, to introduce steam in puffs into the mud. The steam nozzle is shown as located in a mud-draw-off connection mounted on the apex 7 of the conical base 2.

The means for operating the valve 9 comprise striker pins 10 mounted on a shaft-operating gear wheel 11, a follower lever 12 located in the path of the pins so as, when engaged by the pins, to perform rocking movements about its fulcrum 13, and a series of links, levers, or the like indicated generally at 14 connecting the follower lever 12 with the spindle of the valve 9. It will be readily seen that, in the rotation of the shaft 4, the lever 12 is rocked about its fulcrum 13 so as to open the valve, and, in the continued travel of the shaft, the lever 12 is disengaged by the striker pin and permitted to return to its initial position. A spring (not shown) restores the lever to initial position, so as to close the valve.

I claim:—

1. Apparatus for the purpose specified comprising a tank of circular section having a conical base towards the apex of which mud accumulates, superposed trays within said tank, a rotary shaft co-axial with said tank, and scrapers carried by said shaft and riding on the surfaces of said trays and on said conical base, and means for dispersing gas present in the mud, comprising a steam nozzle directed into said tank in the region of mud accumulation, a valve interposed between said nozzle and a source of steam supply, and means operated by said shaft for opening and closing said valve periodically, whereby, in the rotation of said shaft, to introduce steam in puffs into the mud.

2. Apparatus as claimed in claim 1, in which the steam nozzle is located in a mud-draw-off connection.

3. Apparatus as claimed in claim 1, in which the means for operating the valve comprises at least one striker pin participating in the rotary movements of the shaft, a follower lever so arranged in the path of said pin as, when engaged by said pin, to perform rocking movements about its fulcrum, and means connecting said lever with said valve, whereby in the rotation of said shaft, said valve is opened and closed intermittently.

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