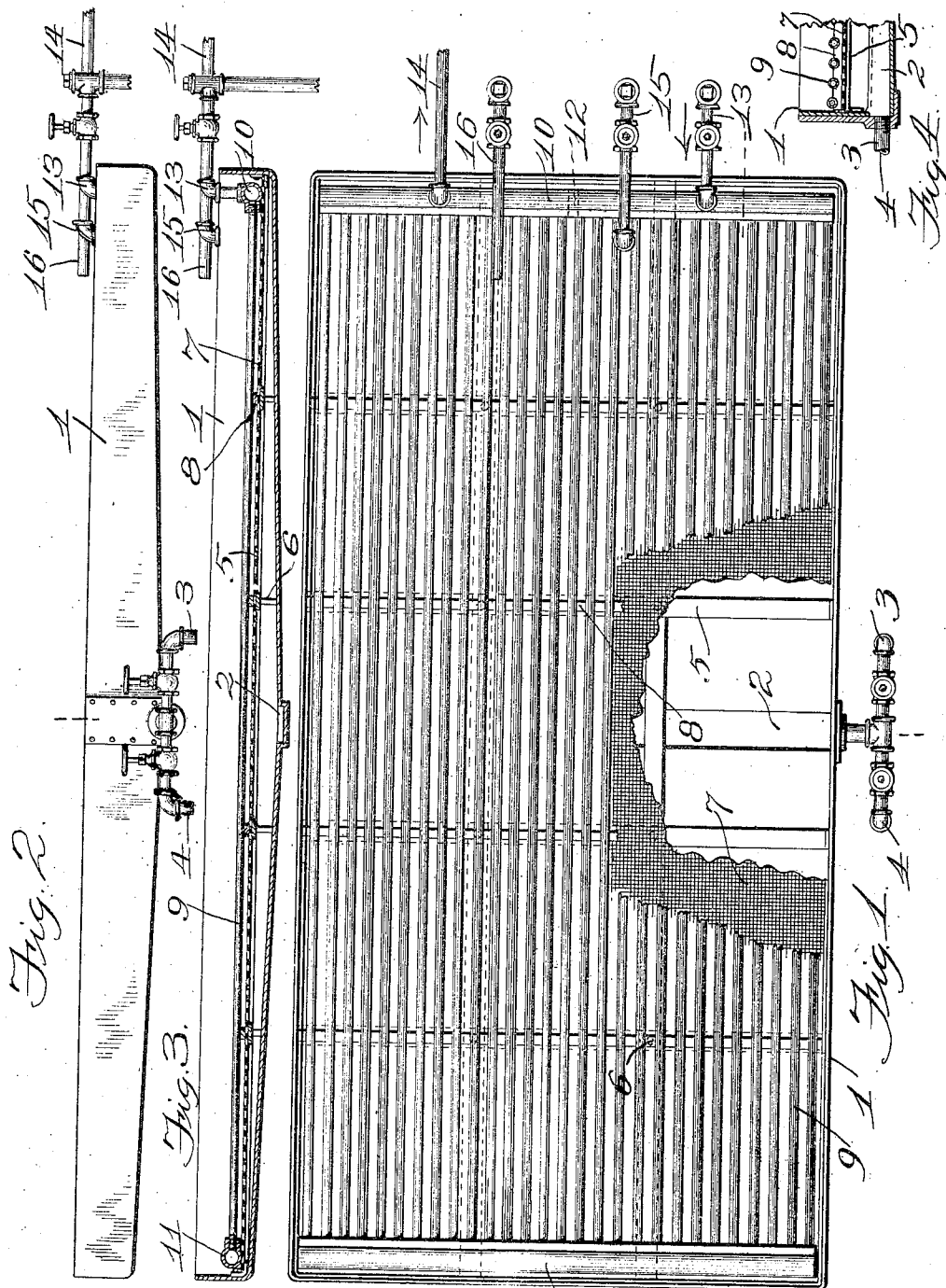


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 PROCESS AND APPARATUS FOR THE EXTRACTING OF OIL FROM WAX.
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942,917.

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UNITED STATES PATENT OFFICE.

JOSEPH C. KUEBLER, OF WELLSVILLE, NEW YORK.

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Specification of Letters Patent.

Patented Dec. 14, 1909.

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To all whom it may concern:

Be it known that I, JOSEPH C. KUEBLER, a citizen of the United States, residing at Wellsville, Allegany county, New York, have invented certain new and useful Improvements in Processes and Apparatus for the Extracting of Oil from Wax, of which the following is a specification.

The present invention will be readily understood from the following description taken in connection with the accompanying drawing in which:—

Figure 1 is a plan of a device illustrating an exemplification of my improved apparatus, portions being broken away: Fig. 2 a front elevation of the same: Fig. 3 a vertical longitudinal section of the same: and Fig. 4 a vertical transverse section at the front portion of the apparatus.

In the drawing:—1, indicates an open topped pan: 2, a drainage gutter in the bottom thereof: 3, a valve-controlled outlet from the drainage gutter: 4, a second valve-controlled outlet from the drainage gutter: 5, open grid-work near the bottom of the pan: 6, legs supporting the grid-work: 7, a horizontal screen lying on the grid-work: 8, cross bars lying on the screen: 9, a series of pipes disposed parallel with each other and extending lengthwise of the pan and resting on the cross bars: 10, a header-pipe connected with the heads of all of the pipes: 11, a header connected with the tail ends of all of the pipes: 12, a transverse partition in header 10, about midway of its length, whereby the header is divided into two chambers, one chamber communicating with about half of the pipes 9, while the other chamber communicates with the other half of those pipes: 13, an inlet pipe communicating with one of the chambers of header 10 and adapted to convey, selectively, the cold water, hot water or steam to header 10: 14, an outlet pipe from the other chamber of header 10: 15, water pipe adapted to deliver water into the pan: 16, a pipe adapted to deliver oil-bearing wax into the pan over the screen.

In the illustration header 10 is a single pipe provided with a transverse partition but it is obvious that the effect is the same as would be the case if the two header chambers were formed of separate pipes. The construction causes the water or steam from pipe 13 to advance through one series of the pipes 9 and to return through the other

series of those pipes and to depart through pipe 14.

The illustration shows but a single pan and it may be here stated that in practice these pans are used in battery.

In carrying out the improved process by the use of this apparatus the steps are as follows:—Through the medium of pipe 15 cold water is delivered to the pan till the water stands somewhat above the top of the screen. Through the medium of pipe 16 the melted oil-bearing wax is then delivered into the pan over the water on which it floats, the quantity of wax admitted being sufficient to nearly fill the shallow pan, or at least to thoroughly cover pipes 9. Through the medium of pipe 13 cold water is now passed through the coils formed by the pipes 9, for congealing the floating wax and forming it into a cake. When the wax is sufficiently solidified the water on which it is previously floated may be withdrawn through pipe 3, leaving the cake of wax supported above the screen by pipes 9 which are embedded in the wax. The cold water circulating through the pipes is now to be shut off and warm water passed through the pipes to greatly raise the temperature of the wax and cause the oil to sweat therefrom. The temperature of the warm water is to be raised as the sweating process proceeds, my practice being to begin to operate with the water at about 80 deg. F. and end the process with the water at or near 130 deg. F. It is recommended that while the sweating process is going on under the influence of the heat thus applied to the interior of the cake of wax, the room temperature be correspondingly raised.

In the early stages of the sweating process the oil leaves the wax freely and as the wax becomes leaner in oil a higher temperature and a more prolonged subjection becomes necessary. The first drainage from the wax is free oil and this oil may be drained from the pan as fast as it drains from the wax, or if desired it may be retained in the pan till the end of this stage at which point this free oil may be withdrawn from the pan in a body. After the free oil has been sweated from the wax there will flow an oil carrying a percentage of wax, sufficient to congeal upon the fingers. This oil, known as yellow wax stock, may be drained from the pan as fast as it is sweated from the wax, or it may be held back in the pan and drained there-

from in a body. The next result of the sweating will be a liquid wax substantially free from oil and differs from the remaining wax mainly in having a lower melting temperature. It is termed light test wax and may be withdrawn from the pan and taken care of separately. The wax over the pipes is now in fibrous form, much similar in appearance to mineral wool. The warm water employed in the sweating process is now to be shut off and steam is to be passed through the pipes, thus melting down the fibrous mass of wax into a liquid which is to be allowed to flow from the pan to some receptacle where it may solidify into the product known as white wax.

I claim:—

1. The improved process for separating oil and wax which consists of the following steps:—first, depositing the oil-bearing wax in melted condition on a body of water and around a tube; second, passing a cooling medium through said tube to solidify the

wax; third, withdrawing the water from below the wax; fourth, passing a heating medium through the tube to raise the temperature of the wax sufficiently to sweat the oil from its pores; and fifth, passing a heating medium through the tube to melt the wax from which the oil has been extracted, substantially as set forth.

2. Apparatus for separating oil and wax comprising, an open topped pan, an outlet therefrom, a horizontal screen supported in the pan, a series of tubes lying on the screen, pipes connected with the tubes to provide for a circulation therethrough of water and steam, a water inlet communicating with the pan, and a pipe for admitting melted oil-bearing wax to the pan above the screen, combined substantially as set forth.

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Witnesses:

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