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C. METHFESSEL
WAX MELTING APPARATUS

Filed Feb. 29, 1924

Fig. 1.

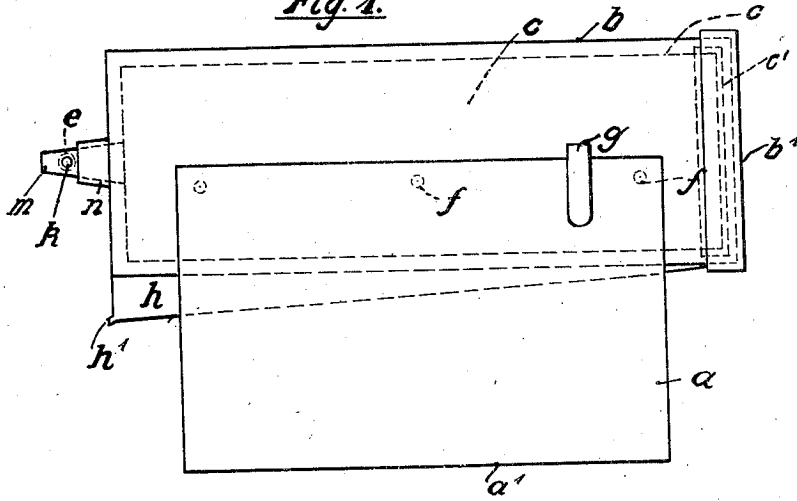


Fig. 2.

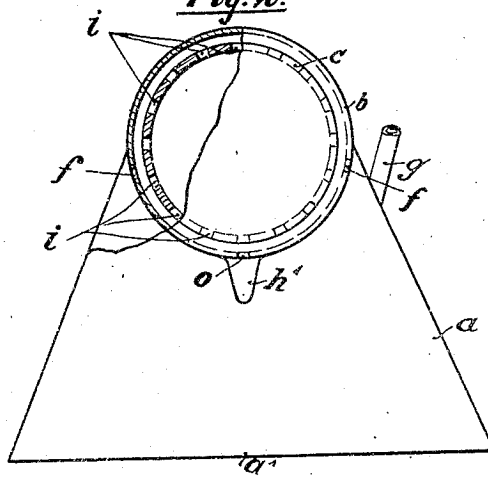
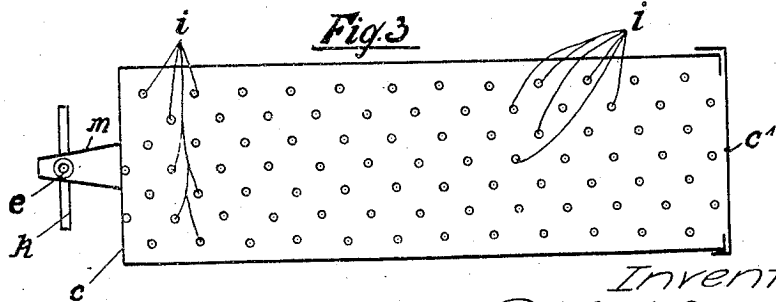


Fig. 3.



Inventor
C. Methfessel

by Langner, Perry, Ward & Langner
Attys.

UNITED STATES PATENT OFFICE.

CARL METHFESSEL, OF SULZBACH-ON-THE-MURR, GERMANY.

WAX-MELTING APPARATUS.

Application filed February 29, 1924, Serial No. 696,092, and in Germany March 23, 1923.

Steam-wax-melting apparatus, by means of which the wax is melted out of the honey-combs are known. Most devices of this kind, particularly those employed in operations on a small scale have considerable disadvantage on account of the inadequate yield in wax, as together with the wax the honey combs contain considerable quantities of other substances such for instance as cocoons with which the cells are lined and constituents which interfere with the free drawing off of the fluid wax. Further as regards absence of danger and other matters the known devices need improvement in many respects.

In the present invention the disadvantages mentioned above are obviated, in consequence of the particular construction of the apparatus, the latter being adapted to the special characteristics of the material to be dealt with namely, honey-combs.

In the construction of the apparatus, the following fundamental ideas were adopted,

1. The wax brought to a molten state must be able to trickle from the crude mass by the shortest path from its original position so that hindrance to the flowing of the wax is avoided.

2. The melting of the crude mass must be effected on a horizontal base of as large a surface as possible in order that it may not be necessary for the mass of raw material to be packed to any considerable depth—a condition which would stop the outflow of the wax. The crude mass should rest as loosely as possible on its support.

3. The support must be formed with numerous small holes in order that the fluid wax may be able to percolate at all points, whilst the fine-grain residues on the contrary are held back. Further it must be possible for the support to be quickly and easily moved from outside (rotated), whereby the crude mass is again loosened and brought into other positions and a new way opened for the remaining wax which has not yet escaped.

4. The crude mass must be subjected to steam over as large as possible a surface and permeated therewith in order to accelerate the melting process.

5. The apparatus must be capable of being employed easily and safely, the opening of the same, as well as the stirring of the crude mass during the melting process should be avoided; as the hot residues cause an unpleasant odour, considerable steam pressure should not arise, the steam must rather flow away freely.

A suitable kind of construction uniting in itself these necessary qualities is a horizontal, cylindrical or tubular melting apparatus in which a melting drum is mounted so that it can be rotated from outside.

In the accompanying drawing one example of construction according to this invention is shown.

Fig. 1 being a longitudinal view of the steam melting apparatus,

Fig. 2 a transverse section of the same.

Fig. 3 a longitudinal view of the melting drum.

In Figs. 1 and 2, *a* is a steam boiler to be partly filled with water. This boiler has a heating bottom *a'*. To this boiler is firmly connected a tubular melting kettle *b* which is partially sunk in the steam boiler *a*. At the right hand end the melting kettle *b* is furnished with a closing cover *b'*, but on the left hand end with a conical tubular opening *n*. In the melting kettle *b* is mounted to rotate the melting drum *c* with a closing cover *c'* and this drum takes the form of a wide tube or cylinder and serves for receiving the crude or melted mass.

In consequence of the horizontal mounting and the tubular form of this drum the entire lower half of the drum is on the one hand made serviceable for the melted material contained therein in so far that the fluid wax in the crude mass has at the utmost little more than half the diameter of the drum to flow through at any place, in order to be able to pass out of the drum; on the other hand the melted mass is spread out and elongated horizontally to avoid any considerable depth of material, whereby any appreciable pressure of the upper on the lower layers is avoided. On the left hand end of the melting drum *c* a pin *m* is firmly connected therewith. This pin runs through the tubular opening *n* into the open air and is there provided with a boring *e* for the purpose of receiving a rotary lever *k*. With this lever *k* the melting drum can be turned (rotated) to the right and left. The melting kettle *b* is furnished at the right and left slightly below the axial horizontal plane through said drum with openings *f* (as see Figs. 1 and 2) through which the steam flows out of the steam boiler *a* and into the melting kettle *b*.

The tube *g* in Figs. 1 and 2 serves for filling the steam-boiler *a* with water. The small holes *i* in the melting drum *c* (see Figs. 2

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