

No. 841,965.

PATENTED JAN. 22, 1907.

N. M. HENDERSON.  
APPARATUS FOR TREATING PARAFFIN WAX.

APPLICATION FILED FEB. 21, 1906.

FIG. 1.

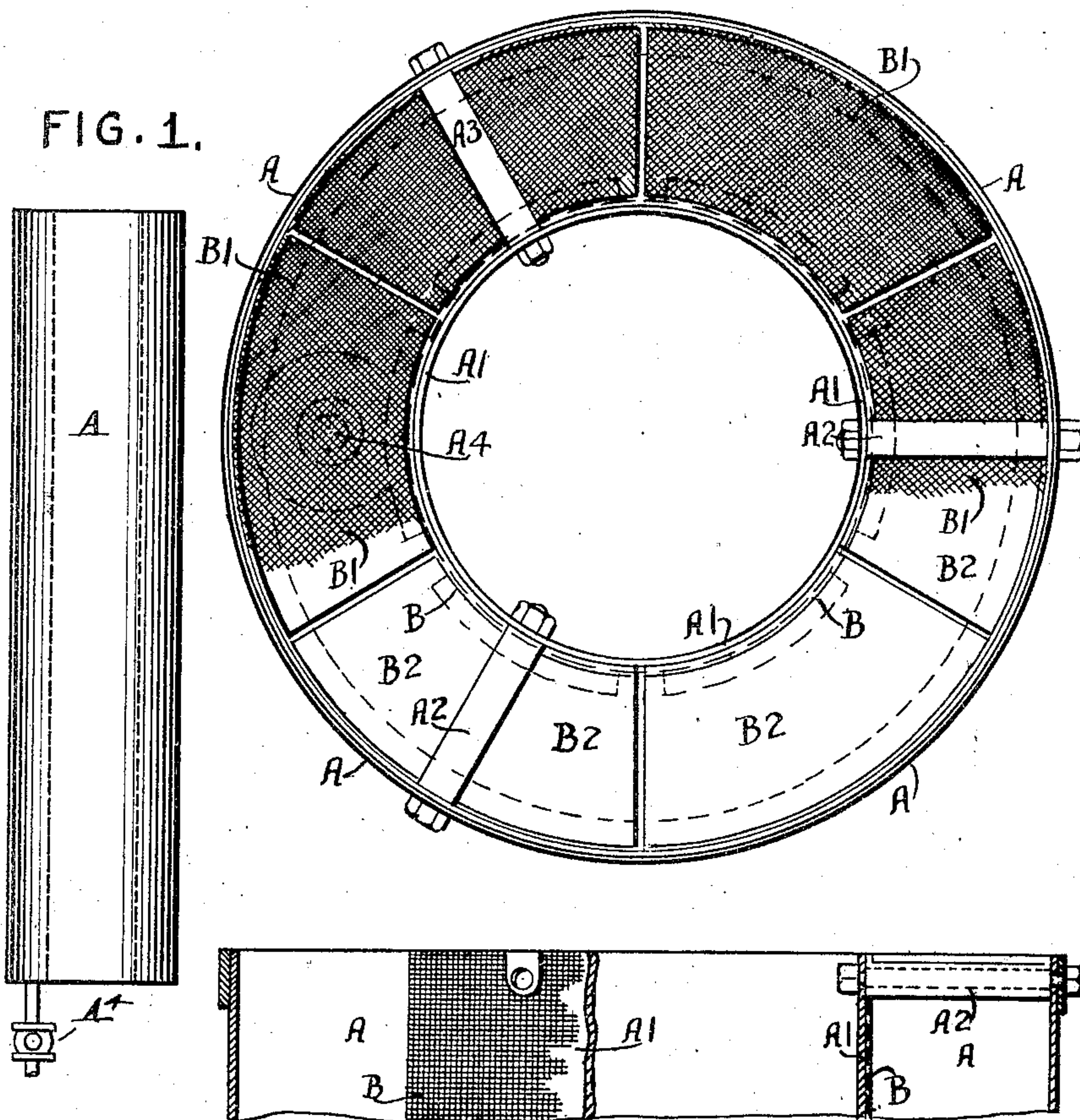


FIG. 3.

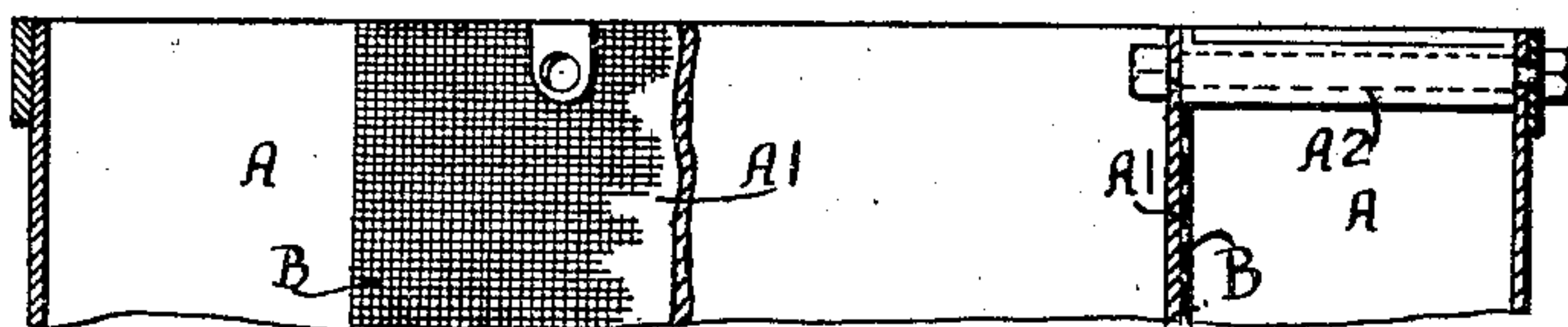
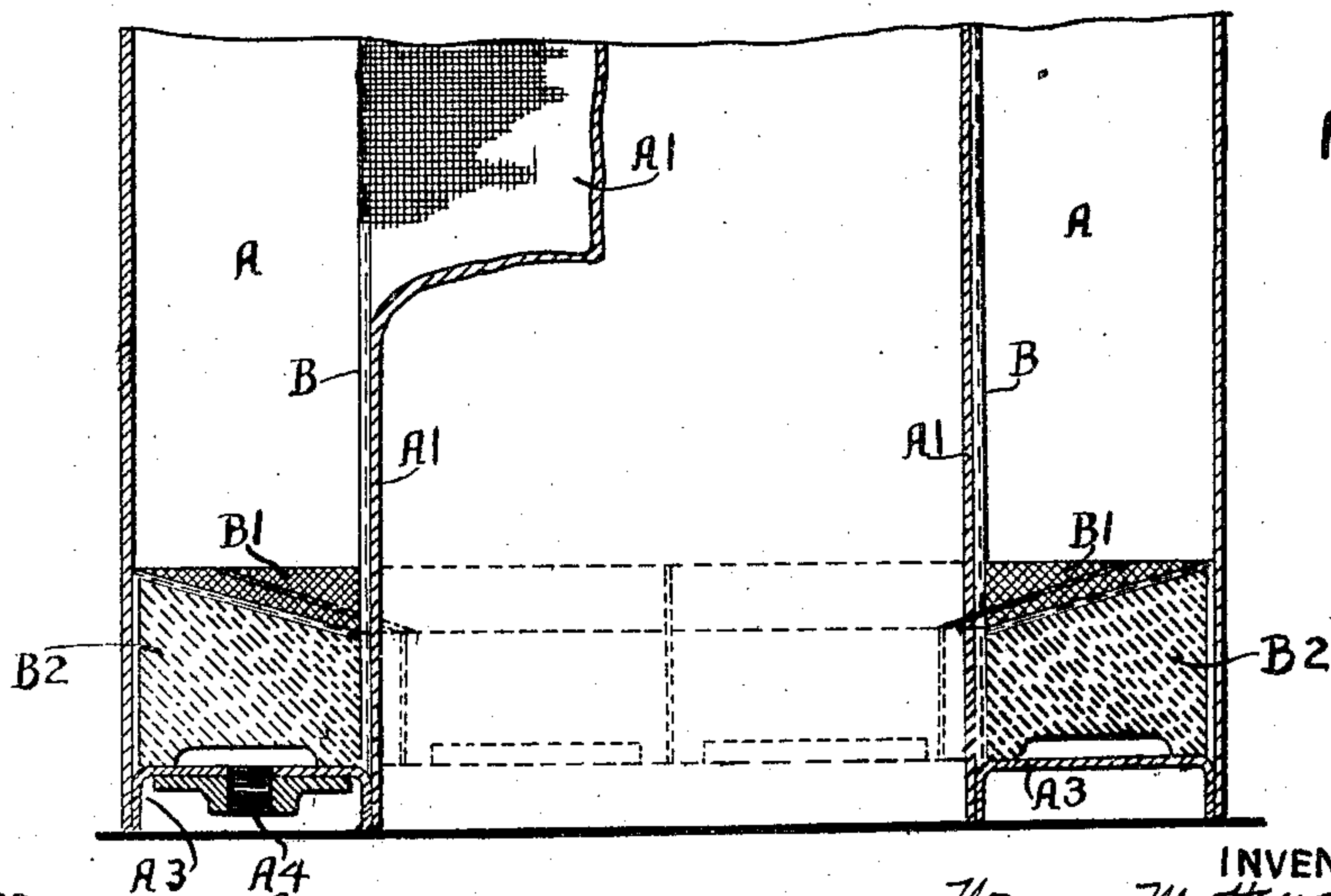


FIG. 2.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR TREATING PARAFFIN-WAX.

No. 841,965.

Specification of Letters Patent.

Patented Jan. 22, 1907.

Application filed February 21, 1906. Serial No. 302,308.

*To all whom it may concern:*

Be it known that I, NORMAN MACFARLANE HENDERSON, a subject of the King of Great Britain and Ireland, and a resident of Broxburn, in the county of Linlithgow, Scotland, have invented certain new and useful Improvements in Apparatus for Treating Paraffin-Wax, of which the following is a specification.

My invention has for its object to improve and simplify the apparatus used in the process of treating paraffin-wax described in my patent specification No. 490,199, January 17, 1893.

According to my present invention the process is greatly expedited, as the wax is treated in columns of sectional area small comparatively to their height, so that it is subjected to the pressure of its own superincumbent weight, and improved draining and cooling devices and arrangements are provided.

In carrying out my present invention the receptacles, which may conveniently be termed "cells," in which the treatment of the paraffin-wax is carried out may be of any convenient form in cross-section; but they are preferably circular, and they are of a height which is great comparatively to their sectional area. They are provided with vertical draining-screens of wire-gauze or other suitable material and with false bottoms of like material, beneath which there is provided a discharge.

In the accompanying drawings, Figure 1 is an exterior view of one of the cells. Fig. 2 is a vertical section drawn to a larger scale and partly broken away, and Fig. 3 is a plan view.

In carrying out the invention as shown in the drawings each cylindrical cell is constructed of any suitable material, such as light sheet-steel, tin-plate, or the like, and it is of a height which is great comparatively to its sectional area, Fig. 1. Within each cell A there is arranged a central cylindrical partition A', its lower end being fixed to support and supported by an annular bottom plate A<sup>2</sup> and its upper end connected to the shell by stays A<sup>3</sup>. Upon the outside of this central cylindrical partition A' there is arranged a vertical draining-screen B of any convenient number of thicknesses, of gauze-wire or other convenient material. The cell A is provided with a false bottom B' of like ma-

terial, (or it might be a perforated plate,) which is supported on blocks B<sup>2</sup> of fire-brick resting on the bottom plate A<sup>3</sup>, the upper surfaces of these blocks and the false bottom B' carried thereon being inclined downward toward the draining-screen B, so as to facilitate the draining action hereinafter described. The blocks B<sup>2</sup> are so shaped that an annular passage is formed between them and the bottom plates A<sup>3</sup>, and a discharge-outlet A<sup>4</sup> is provided with a stop-cock. Any convenient number of these cells A are arranged in rows in a sweating-house of the usual type and heated by steam or hot-water pipes.

In operation water is first supplied to the cell to a height to cover the false bottom B', and the stop-cock in the outlet A<sup>4</sup> is closed. Then the molten impure paraffin is poured into the cell until the latter is full, and the body of wax floats on the water in the cell, as described in my former patent, and it is allowed to solidify. The cooling of the wax mass obviously takes place from the outside inwardly, owing to the shape of the cells—that is, owing to the fact that the central partition A' is much less exposed than the outer walls of the cells A. Solidification of the wax therefore takes place first at the outer unscreened sides of the cells, while the oil, soft wax, and other impurities are gradually forced inward toward the vertical draining-screen B on the central cylindrical partition A'. After cooling and complete solidification of the paraffin-wax the valve in the outlet A<sup>4</sup> is opened and the water allowed to run off through suitable pipes to separating-tanks outside the house. The house is then closed and heat is applied by means of steam-pipes, and the sweating is then carried out in the usual manner, with the result that the oil and other impurities next the screens B are first forced through them, the screens and false bottom B' acting as wicks, draining off these portions, so that they pass off by the drain-pipes to receivers. (Not shown.) Owing to the height of the column of wax, this draining process is much more rapid than when the operation is performed in comparatively shallow trays, owing to the pressure developed by the superincumbent weight of the column. During the remaining stages of the operation the intermediate grades of paraffin-wax are separated and drawn off to their respective receivers, steam being preferably blown into the chamber at



the final stage to expedite the melting out of the pure paraffin-wax.

I claim as my invention--

1. An apparatus for treating paraffin-wax, 5 having a cell of a height which is great compared to its sectional area, with its more exposed side unscreened, a vertical draining-screen on the less-exposed side thereof, and a false bottom of permeable material therein, 10 and a discharge beneath said bottom, whereby the wax may be solidified and sweated in the same cell as described.

2. An apparatus for treating paraffin-wax, 15 having a vertical cell, a permeable screen on one vertical surface of the cell, and the other vertical surface being unscreened whereby draining takes place by the pressure developed by the superincumbent weight of the column of wax, the screens acting as

draining-wicks, and the solidification of the 20 wax taking place first at the unscreened surface of the cells, as described.

3. An apparatus for treating paraffin-wax, 25 having a cell circular in cross-section, of a height which is great compared to its sectional area, a central cylindrical partition therein, a permeable screen at the outside of said partition, a permeable false bottom inclined downward toward the screen, and a discharge beneath said bottom, as described. 30

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NORMAN M. HENDERSON.

Witnesses:

DAVID FERGUSON,  
WILFRED HUNT.