D. WHITAKER.

SOAP RE-MELTER.

No. 180,688. Patented Aug. 1, 1876.

Fig. 1.

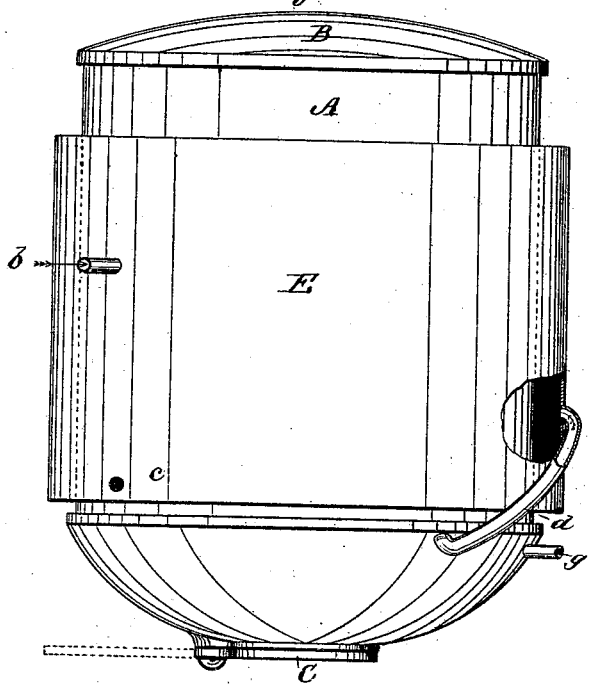
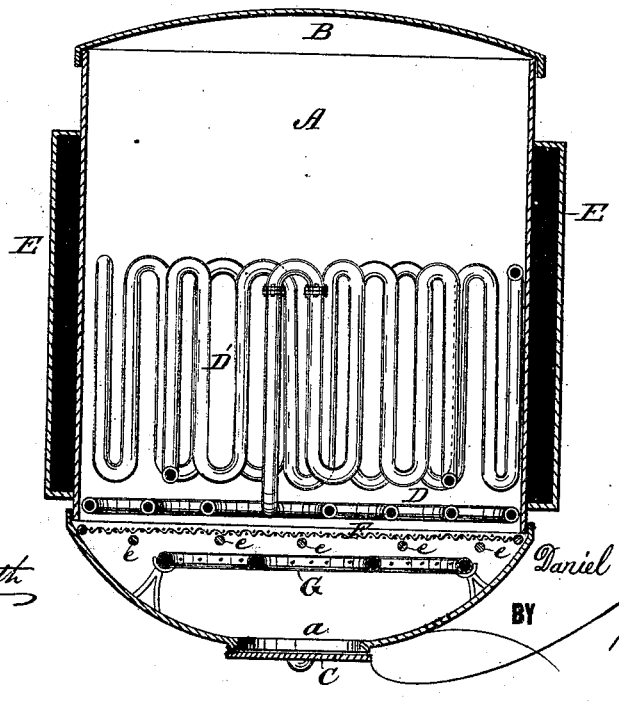


Fig. 2.



WITNESSES:

W. W. Hollingsworth

J. C. Kenon

INVENTOR:

Daniel Whitaker

BY

Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

DANIEL WHITAKER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SOAP-REMELTERS.

Specification forming part of Letters Patent No. **180,688**, dated August 1, 1876; application filed June 21, 1876.

To all whom it may concern:

Be it known that I, DANIEL WHITAKER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Soap-Remelter; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a side elevation with a portion of the jacket broken away. Fig. 2 is a vertical section.

The object of my invention is to provide a vessel for remelting the scraps or "fillings" of soap, (produced by the cutting up of the soap into bars while in the soap-frames,) whereby the said scraps are utilized by being re-embodied into a solid homogeneous mass. In melting these scraps in pots, caldrons, or vessels of the ordinary construction, the heat at the sides and bottom not only melts but decomposes the soap in proximity to the same before the central portions are melted, and the result is that the product is of such an inferior quality as to be practically worthless.

My invention consists in constructing a pot or caldron with an open bottom, adapted to be closed by a door or cut-off, and providing the interior with steam-coils and a diaphragm of woven wire. The said vessel is heated by steam admitted through the steam-coils, and also by a steam-jacket, and as the scraps of soap are thrown into the vessel, their lodgment upon the coils and the woven-wire diaphragm maintains them in suspension in a uniform steam heat until they are melted, and as soon as melted they drop through the coils and woven wire, out through the open bottom, before the soap has time to decompose, and being remelted without injury, it is allowed to pass into the soap-frames, and be thus utilized by being cut into bars.

In the accompanying drawing, A represents the containing-case of my improved remelter, which is made of metal, and of a capacity sufficient to hold about fifteen hundred pounds, more or less. Said case is provided with a removable cover, B, and tapers below to an outlet-orifice, *a*, which is provided with a pivoted door or cut-off, C. DD′ are the steam heating-coils, arranged inside the case A in two sets, one of which, D, is arranged near the bottom in horizontal spiral coils, which connect at the center with the second set, D′, which are arranged in vertical coils just above D. These coils are each made of a continuous pipe, bent without elbow-joints, so as to obviate leakage, and facilitate the cleansing of the same, and the two coils are connected near the top, so as to make access to said connection easy. These coils receive their steam through a pipe, *b*, projecting through the side of the vessel, and discharge their steam through pipe *d* into an annular space formed by a jacket, E, placed around the case A, to assist in heating the same, the steam being allowed to escape therefrom through an orifice, *c*. F is the diaphragm composed of woven wire, and supported upon cross-rods *e*, or in any other way, near the bottom of the case, which diaphragm serves to support the smaller scraps of soap, and prevent them from passing through until melted.

In the bottom of case A is arranged another steam-coil, G, located just below the diaphragm. Said coil projects at one end through the case, as at *g*, through which end the steam is admitted, and is perforated throughout its length in the vessel, so as to admit the steam directly into the vessel. The object of this is twofold: first, for cleaning out the vessel, the steam in this instance being allowed to blow through the vessel upwardly, and loosen, melt, and drive out the loose particles of soap; and, secondly, to fill the vessel with steam while the soap scraps are being melted, which is necessary for the purpose of restoring to the scrap some of its moisture, and thus compensating for that which it has lost in drying.

In using my improved melter, as thus described, the case A is filled with the scraps of soap, the cover put on, and the cut-off at the bottom closed. Steam is now admitted through the coil G directly into the vessel, and in contact with the scraps, to soften them and restore their moisture. This part of the operation is continued for five or ten minutes, according to the dryness of the scraps, after which the steam is cut off from this coil, and admitted into the heating-coils and jacket, to complete the melting of the scraps, which, as fast as they melt, drop down through the

woven-wire diaphragm, and pass out at the open bottom of the case, before the influence of the heat has had time to decompose the same. The melted soap, which is thus fused together in a solid mass, is collected in the soap-frames below, and utilized in the usual way, to make as good, if not better, soap than the original, some qualities of soap being greatly improved by the process.

Having thus described my invention, what I claim as new is—

1. A vessel for melting soap, having an open bottom and an internal support, which sustains the soap when in a solid form, but allows it to pass through when melted, substantially as described.

2. The combination, with the containing-vessel, provided with heating apparatus, and having an open bottom, of a perforated diaphragm, substantially as and for the purpose described.

3. The combination, with the case A and the open diaphragm F, of the steam heating-coils D D′, substantially as and for the purpose described.

The above specification of my invention signed by me this 17th day of June, 1876.

DANIEL WHITAKER.

Witnesses:
EDWD. W. BYRN,
SOLON C. KEMON.