S. STRUNZ.

Soap-Crutching Machine.

No. 202,886. Patented April 23, 1878.

Fig. 1.

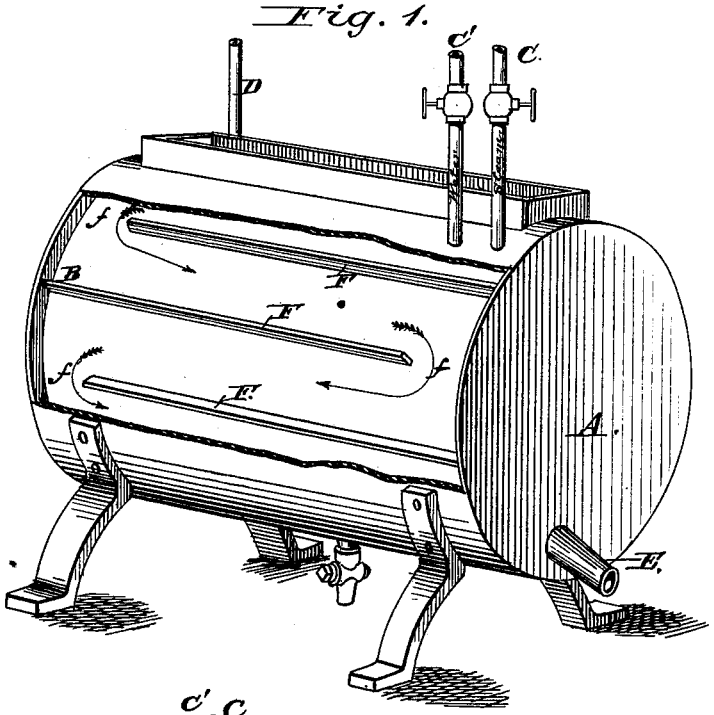
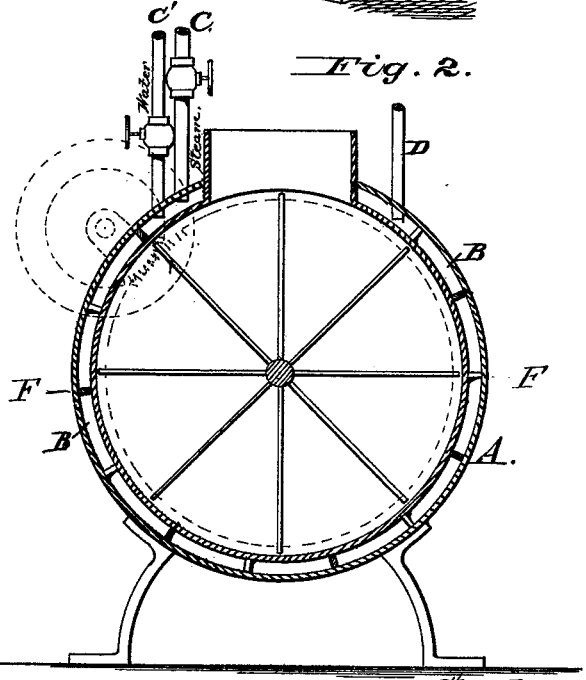


Fig. 2.



Attest:
H. L. Berine
J. A. Rutherford

Stephen Strunz.
Inventor
By. James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

STEPHEN STRUNZ, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN SOAP-CRUTCHING MACHINES.

Specification forming part of Letters Patent No. **202,886**, dated April 23, 1878; application filed February 18, 1878.

To all whom it may concern:

Be it known that I, STEPHEN STRUNZ, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Soap-Crutching Machines, of which the following is a specification:

This invention relates to certain improvements upon the machine for crutching soap described in certain Letters Patent No. 138,958, May 13, 1873, which consists of a cylindrical vessel having centrally mounted within it a shaft provided with a series of flat blades, the said vessel having suitable top and bottom openings for the introduction and removal of the soap, the fluid or semi-fluid soap being conducted from the boiling vats and introduced in a hot state into said vessel, and treated therein with certain chemicals.

It has been found desirable, in practice, that the soap should be gradually and evenly cooled during the crutching process; and to accomplish this successfully is the object of my invention.

To this end my invention consists in combining with the cylindrical vessel, constructed substantially as described in my above-mentioned patent, a cylindrical jacket, leaving an annular space between said cylindrical vessel and jacket, and providing the said annular space with a series of partial partitions, extending alternately from opposite sides of the annular space and forming a tortuous passage around the cylindrical vessel, whereby water or steam introduced into one end of said passage is caused to flow longitudinally back and forth in the same, and around the cylindrical vessel, so as to maintain an even temperature therein or gradually reduce the temperature.

In the accompanying drawing, Figure 1 represents a perspective view of my improved apparatus, showing a portion of the jacket removed, and Fig. 2 a central vertical section thereof.

The letter A indicates the cylindrical vessel for containing the soap, which is provided with a centrally-mounted shaft provided with flat blades A′ as usual. The letter B represents the surrounding cylindrical jacket, of such diameter as to leave an annular space, *f*, between it and the vessel A. The letter F represents a series of longitudinal partitions, extending alternately from one end of the cylinder and terminating near the opposite end thereof, forming a tortuous passage extending entirely around the cylindrical vessel. The letters C and C′ represent, respectively, pipes provided with stop-cocks and extending into the space between the jacket and cylindrical vessel. These pipes are intended for the admission of steam or water at one end of the tortuous passage formed between the jacket and vessel, as may be desired. The letter D represents an eduction-pipe, leading from the other end of said passage, for the escape of water and steam.

The operation of my improvement is as follows: While the crutching operation is being performed, if it is desired to maintain the temperature of the soap within the vessel, steam is admitted into the tortuous passage through the pipe C′, and allowed to circulate through said passage in proper quantities to produce the desired effect. When it is desired to cool the soap, the steam is shut off and water admitted through pipe C in proper quantities to effect the desired result.

The apparatus, although it may be used for maintaining the temperature of the soap in the vessel, is principally designed for cooling it gradually and effectually, and without the use of ice, as has heretofore been found necessary, thereby materially reducing the expense of the operation.

I am aware that rectangular vessels for cooling lard and milk, having a rectangular space below provided with partial partitions, forming a tortuous passage under the bottom, have heretofore been employed; but such is not my invention, and such vessels could not be employed successfully with a series of rotating paddles for crutching the soap.

I am also aware that an upright cylindrical vessel in a condensing and evaporating apparatus has been surrounded by a spiral passage or coil for the flow of the liquid, as shown in the patent of J. J. Miller, December 23, 1862.

What I claim is—

In an apparatus for crutching soap, a horizontal cylindrical vessel having centrally-mounted therein a shaft provided with a se-

ries of flat blades and surrounded by a cylindrical jacket, leaving an intervening annular space having a series of partial longitudinal partitions starting alternately from opposite ends of the vessel, whereby a tortuous passage, extending entirely around the cylindrical vessel, is formed, which is provided with induction-pipes for steam and water, and an eduction-pipe for the escape of the same, substantially as and for the purposes specified.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

STEPHEN STRUNZ.

Witnesses:
B. KRUGH,
G. J. CHAMBERS.