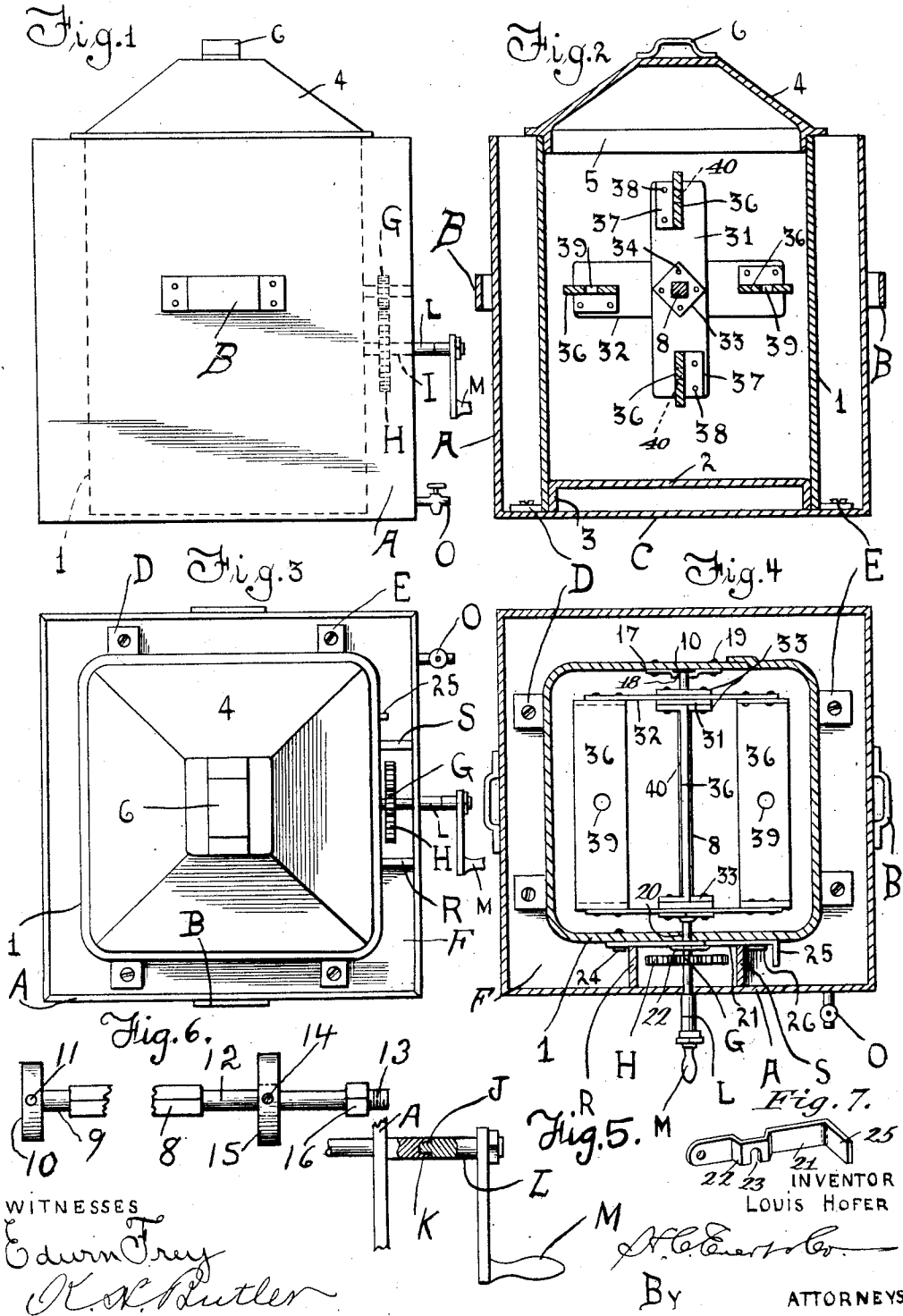


L. HOFER.
CHURN.

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UNITED STATES PATENT OFFICE.

LOUIS HOFER, OF PITTSBURGH, PENNSYLVANIA.

CHURN.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LOUIS HOFER, a subject of the Emperor of Austria-Hungary, residing at N. S. Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Churns, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention is an improvement in my patent on churns granted July 5, 1910, No. 963,560.

The present invention has for its object to provide novel means whereby the churn can be rapidly operated, thus reducing the time heretofore required in manufacturing butter, ice cream and other matter that is made by churning, mixing or commingling ingredients.

I attain the above object by a mechanical construction that will be hereinafter specifically described and then claimed, and reference will now be had to the drawing forming a part of this specification, wherein:—

Figure 1 is a side elevation of the churn, Fig. 2 is a vertical cross sectional view of the same, Fig. 3 is a plan of the churn, Fig. 4 is a horizontal sectional view of the same, Fig. 5 is an enlarged elevation of the operating means partly broken away and partly in section and Fig. 6 is a side elevation illustrating the dasher shaft and its connections. Fig. 7 is a perspective view of a detached bearing.

In devising the present invention, I have aimed to provide means whereby the churn can be used as an ice cream freezer or machine for agitating ingredients while they are frozen, and to this end, I provide an outer tub or receptacle for the churn and partition off a portion of the outer tub or receptacle for the operating means of the churn.

The churn comprises an outer tub or receptacle A rectangular in cross section and having two opposite sides thereof provided with handles B whereby the tub or receptacle can be easily handled. Secured to the bottom C of the tub or receptacle A by screws D or other fastening means are lateral lugs E, carried by the lower edges of the receptacle 1 shown and described in my previous patent. The tub or outer receptacle A is larger than the receptacle 1 thus providing a space F in which ice or another refrigeratory agent can be packed for freez-

ing matter as it is agitated within the receptacle 1.

I quote as follows from my previous patent:

"The receptacle is preferably made of one piece of sheet metal having the vertical edges thereof soldered, brazed or otherwise connected to form a rectangular structure, secured in the bottom of this structure is a bottom plate 2 having depending flanges 3 adapted to be soldered or otherwise connected to the inner sides of the walls of the receptacle.

"4 denotes a lid or cover adapted to fit upon the upper edges of the receptacle, said lid or cover having a depending flange 5 extending into the upper end of said receptacle, and furthermore, a handle 6 whereby the lid or cover can be easily handled. * * *

"8 denotes a shaft rectangular in cross section for a greater part of its length, one end of the shaft being cylindrical, as at 9 and provided with a detachable circular head 10 adapted to be held upon the cylindrical portion of the shaft by a set screw or other fastening means 11. The opposite end of the shaft is provided with a cylindrical portion 12 and the extreme end of the shaft is threaded, as at 13. Detachably mounted upon the cylindrical portion 12 by a set screw 14 is a circular head 15, this head being provided with an opening sufficiently large to clear the rectangular portion 16 of the shaft when mounting the head upon the cylindrical portion.

"17 denotes a bearing having a slot 18 with one end thereof open, said bearing being riveted or otherwise secured, as at 19 to the inner side of the rear wall of the receptacle 1. The bearing is adapted to receive the circular head 10 of the shaft 8. The front wall of the receptacle 1 is provided with an opening 20 through which the cylindrical portion 12 of the shaft 8 is adapted to extend, and the head 15 is mounted upon the shaft whereby it will engage the outer side of the front wall of the receptacle 1. The shaft is held in place by a locking lever 21 having an off-set portion 22 provided with a slot 23. The locking lever 21 is pivotally connected to the front wall of the receptacle, as at 24, and the slot 23 is adapted to provide clearance for the cylindrical portion 12 of the shaft while the off-set portion 22 provides clearance for the head 15. The outer end of the locking lever 21 is bent to

form a handle 25 and is adapted to engage in a bracket 26 secured to the front wall of the receptacle.

5 "The cylindrical end of the shank is provided with a small gear wheel G meshing with a large gear wheel H mounted upon a shaft I journaled in the wall of the receptacle 1 and the wall of the tub or outer receptacle A, said shaft having the outer end 10 thereof provided with a threaded socket J to receive the threaded shank K of a shaft L, said shaft having the end thereof provided with a crank or handle M. It is through the medium of the gear wheels G and H that 15 the shaft 8 is rapidly rotated.

"The dasher or agitator comprises cross arms 31 and 32, the inner sides of the arms 31 and the outer sides of the arms 32 being provided with face plates 33 and extending 20 through said face plates and the arms are rivets, bolts or other fastening means 34 adapted to hold the arms 31 and 32 in assembled position. The arms and plates are provided with longitudinally alining rectangular openings 36 to receive the rectangular shaft 8. The outer ends of the arms 31 and 32 are connected by transverse blades 36, the blades having the ends thereof flanged, as at 37, and riveted or otherwise 30 secured to the outer ends of the arms 31 and 32, as at 38, with the outer edges of the blades protruding beyond the ends of the arms. Two oppositely disposed blades are provided with openings 39 intermediate the 35 ends thereof while the other blades are provided with a plurality of openings 40. These openings are adapted to facilitate the commingling and agitation of the contents of the receptacle when the dasher or agitator is revolved within the receptacle. 40

"The opening 20 of the front wall of the receptacle is of a sufficient size to allow the rectangular portion of the shaft 8 to enter the receptacle and with the dasher or 45 agitator held within the receptacle, the shaft

can be extended through the openings 35, the head 10 placed upon the end of the shaft and then seated in the bearing 17. Since the cylindrical portion 12 of the shaft is of a less diameter than the opening 20, the shaft can be moved sufficiently to allow the head 10 to be placed upon the end of the shaft and then in the bearing. The head 15 can then be clamped in position, the locking lever 21 closed and the crank 26 placed upon 55 the end of the shaft. The churn is then in condition to be used."

One of the walls of the tub or receptacle A can be provided with a spigot or faucet O whereby water or other liquid matter can 60 be drained from the compartment F.

The compartment F is provided with partitions R and S to prevent the refrigeratory agent from interfering with the gear wheels G and H, these partitions extending from 65 the bottom C of the tub A to the upper edges of the receptacle 1.

What I claim is:—

A device of the character described comprising an open-top casing, a churn body 70 seated therein and secured to the bottom of the casing in a position to space it from the side walls of the casing, said churn body having a removable cover, a dasher structure within the churn body and rotative on 75 a horizontal axis, means projecting through the casing for rotating the dasher structure, said means including gear mechanism located between the opposing walls of the casing and the churn body, and partitions between said opposing walls for segregating 80 the gear mechanism from the remaining annular space surrounding the churn body.

In testimony whereof I affix my signature in the presence of two witnesses.

LOUIS HOFER.

Witnesses:

KARL H. BUTLER,
EVA A. MILNE.