

J. C. RICE.
CHURN.
APPLICATION FILED MAR. 31, 1909.

950,056.

Patented Feb. 22, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

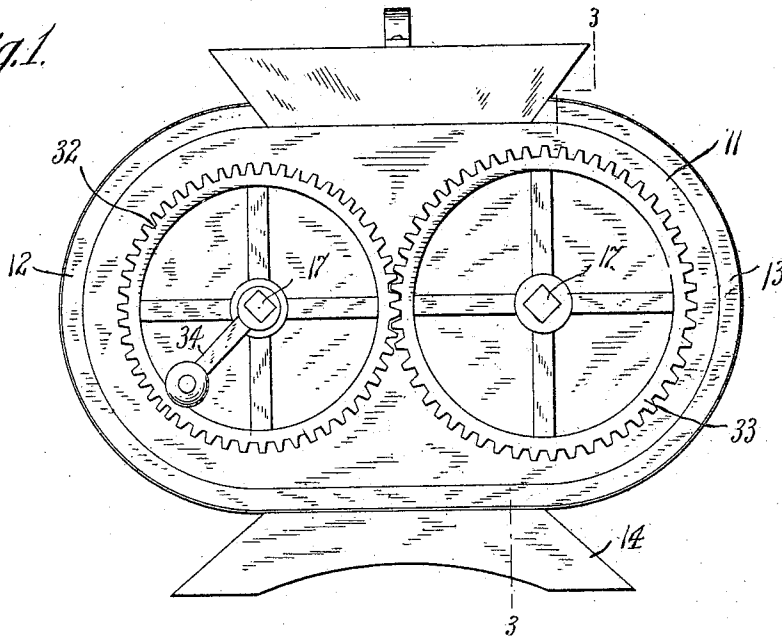
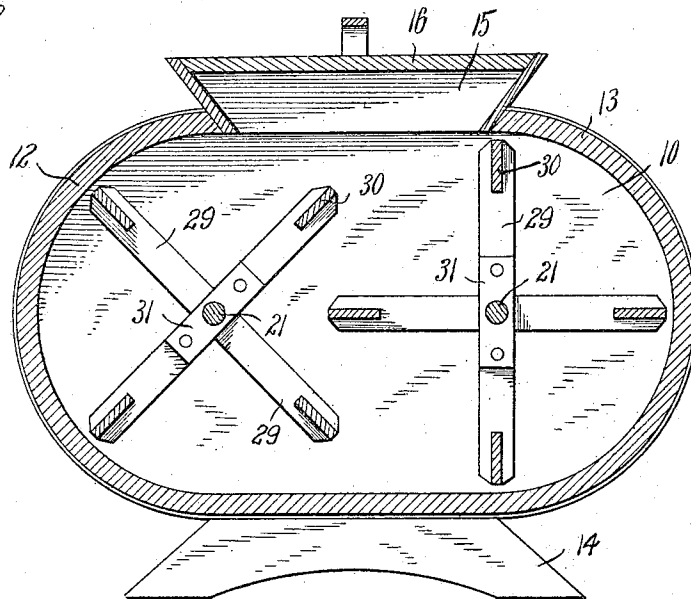


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3

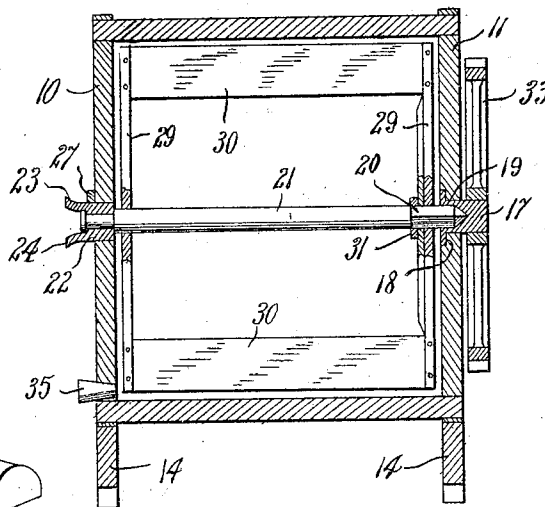


Fig. 5

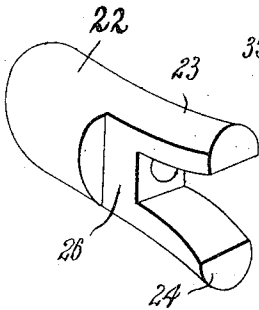
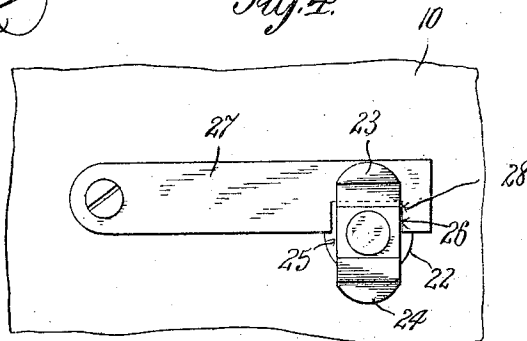


Fig. 4



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UNITED STATES PATENT OFFICE

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950,056.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN C. RICE, a citizen of the United States, residing at Sedro Woolley, in the county of Skagit, State of Washington, have invented certain new and useful Improvements in Churns; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to churns, and has for one of its objects to improve the construction and increase the efficiency and utility of devices of this character.

With this and other objects in view the invention consists in certain novel features of construction as hereafter shown and described and then specifically pointed out in the claims, and in the drawings illustrative of the preferred embodiment of the invention, Figure 1 is a side elevation from the drive side, of the improved device. Fig. 2 is a longitudinal sectional elevation. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is an enlarged detail view of one of the shaft holding devices illustrating its construction. Fig. 5 is a perspective view of one of the bearings of the shaft illustrating its construction.

The improved device comprises a rectangular casing or cream receptacle formed with spaced sides 10—11 and curved ends 12—13. The receptacle is mounted upon suitable supports 14 and provided with an aperture 15 in the upper part provided with a detachable closure 16.

Connected into the sides 11 of the receptacle are spaced studs or stub shafts 17, the stub shafts being located centrally of the curved ends 12—13. The stub shafts are precisely alike and a description of one will suffice for both. The stub shafts are each provided with a flange on their inner ends, one of the flanges being shown at 18 in Fig. 3. The flanges are embedded within the side member 11, while the stub shafts project beyond the outer face of the same as shown. Each of the stub shafts is provided with a socket 19 in its inner end, the socket being preferably square, and fitting into each of the sockets is a square terminal 20 of a transverse shaft 21, so that the stub shafts 17 will rotate with the transverse shafts 21, as hereafter described.

Fitting within the side member 10 of the

receptacle are spaced bearings, one of which is shown at 22, and mounted for rotation in these bearings are the opposite ends of the shafts 21 as illustrated in Fig. 3. One of the bearings 22 is represented in perspective in Fig. 5, and each of these bearings is formed with projecting and diverging arms 23—24 and flattened at the sides as shown at 25—26, the arms 23—24 and the flattened sides 25—26 being located externally of the side 10, while the body of the bearing extends through the side member.

Swinging upon the side member 10 adjacent to each of the bearings 22 is an arm, one of which is represented at 27, and each arm provided with a notch 28 fitting over the flattened portion of the bearings 22, and thus maintain the latter from rotation and at the same time preventing outward movement thereof. By this means the shafts 21 are retained in position while at the same time leaving them free to be rotated within the receptacle.

Mounted upon the shafts 21 are paddle devices each comprising lateral arms 29 and horizontal "paddle" elements 30. Any number of the lateral arms and their connecting paddles may be employed, but for the purpose of illustration four of the paddles with their connecting arms are shown.

One of the arms of each paddle device next to the squared end 20 of the shafts 21 is provided with a plate 31 having a square aperture to receive the squared portions 20 of the shafts, the squared portions being of sufficient length to extend through the plates as illustrated in Fig. 3. By this means it will be obvious that the paddle devices are coupled to the shafts and partake of the rotary motion of the latter. It will also be obvious that by releasing the arms 27 from the bearings 22 the shafts 21 may be withdrawn from the stub shafts 17 and likewise withdrawn from the paddle devices leaving the latter free to be removed through the opening 15. By this means the paddle devices and the interior of the casing may be readily cleansed after each churning.

Mounted upon the stub shafts 17 externally of the receptacle are intermeshing gear wheels 32—33, one of the gear wheels having an operating crank 34. By this means the requisite motion is imparted to the paddle devices.

The paddles will be arranged as repre-

sented in Fig. 2 so that in rotating one set of paddles of one shaft will lie between the paddles of the other shaft in regular order as the paddle devices are rotated.

5 It will thus be obvious that a simply constructed and efficient churn is produced, which may be inexpensively manufactured, and from which the paddle devices may be readily detached for cleansing by simply
10 removing the driving shafts 21, before described. A drawoff plug is located in the receptacle as shown at 35.

What is claimed, is:—

15 1. A churn comprising a receptacle having spaced sides, a stub shaft extending through one of said sides and provided with an inwardly opening socket, means for rotating said stub shaft, a shaft seat at one
20 end in said socket and partaking of its motion, a bearing extending through the other of said sides and in which said shaft is mounted for rotation, means for holding said bearing and the drive shaft carried thereby from outward movement, and a
25 paddle device detachably mounted upon said shaft and partaking of its movement.

2. A churn comprising a receptacle hav-

ing spaced sides, a stub shaft extending through one of said sides and formed with an inwardly opening socket square trans- 30
versely, means operating externally of the casing for operating said stub shaft, a shaft having a squared portion fitting in said socket and thereby coupled for rotation with the stub shaft, a bearing extending through 35
the other of said sides and in which said shaft is mounted for rotation, means for holding said bearing and the shaft carried thereby from outward movement, a paddle device comprising lateral arms and connect- 40
ing paddles and through which said drive shaft extends, and a plate connected to said paddle device and provided with a square aperture through which the square portion of said shaft extends, whereby the paddle 45
device is detachably coupled to the shaft and partakes of its motion.

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

JOHN C. RICE.

Witnesses:

HEMAN H. HINDS,
BEN. HIGHTOWER.