

(No Model.)

E. SILEN.
COMBINED CHURN AND BUTTER WORKER.

No. 509,772.

Patented Nov. 28, 1893.

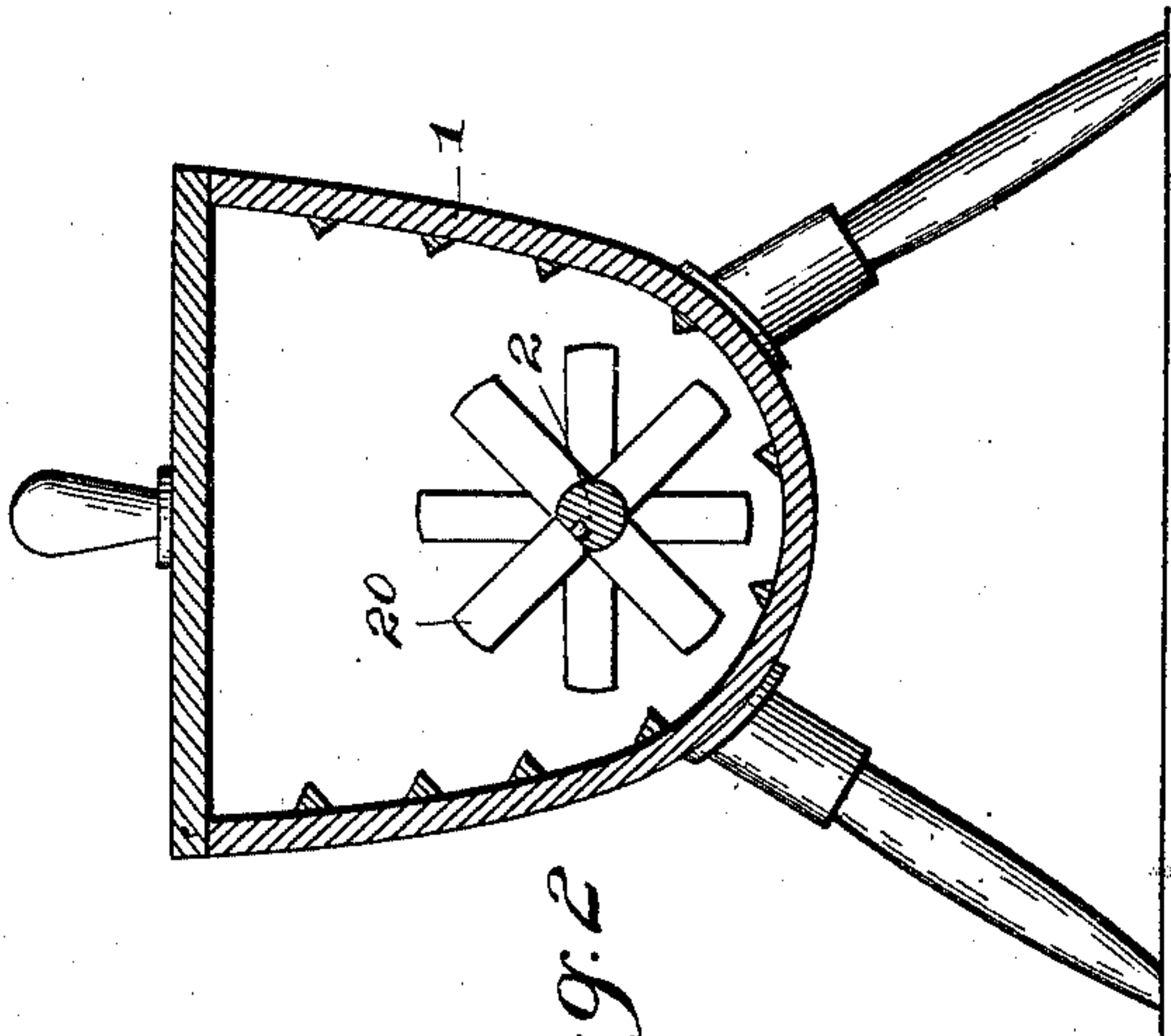


Fig. 2

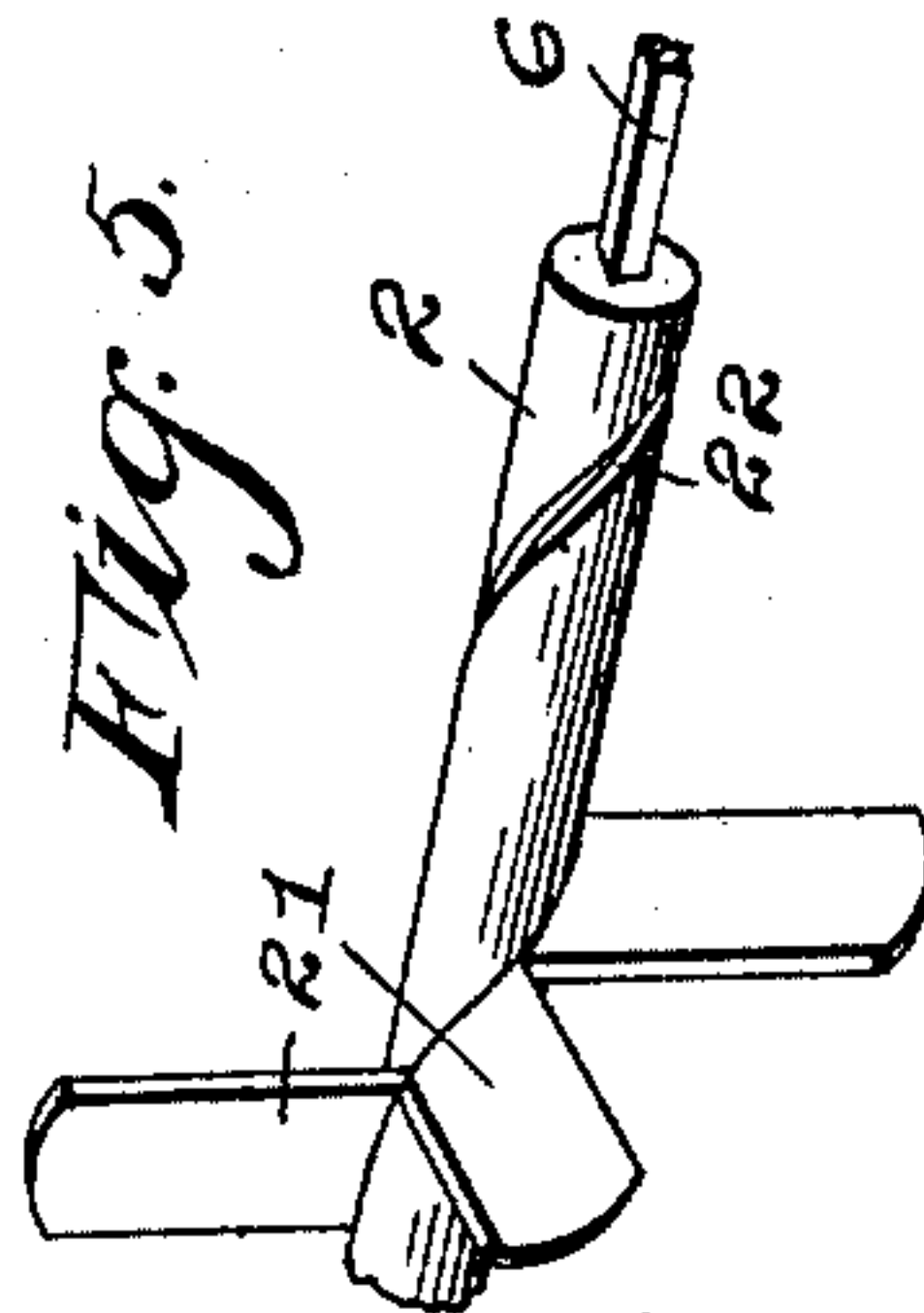


Fig. 5.

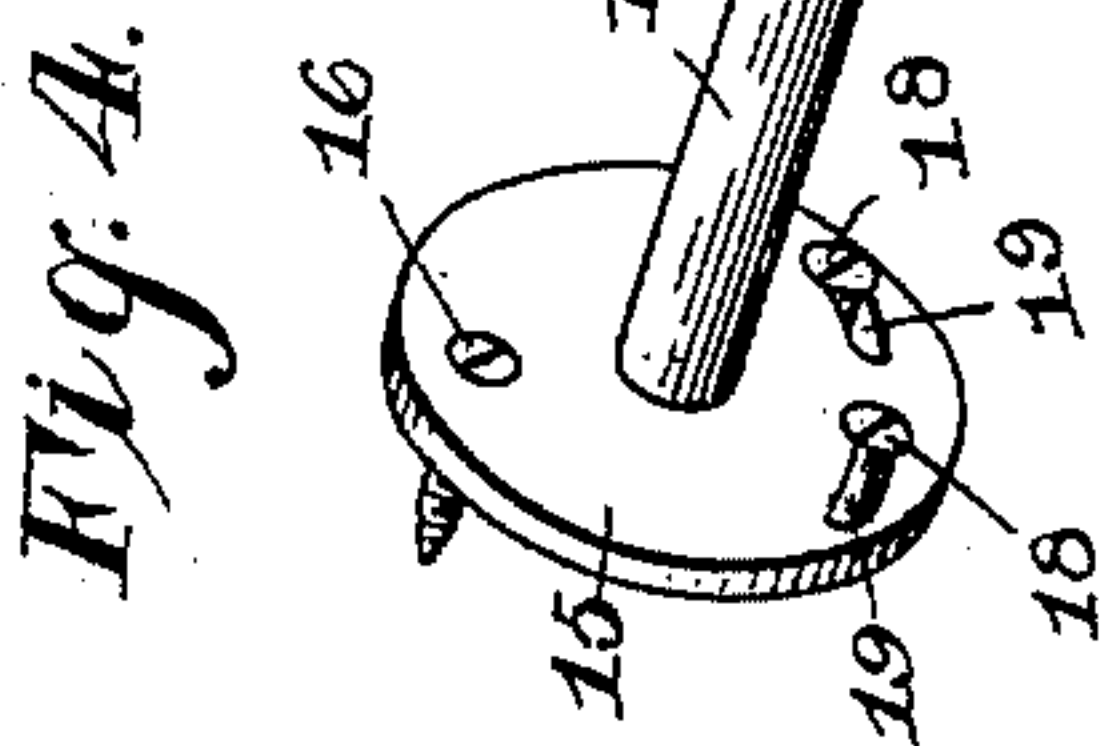


Fig. 4.

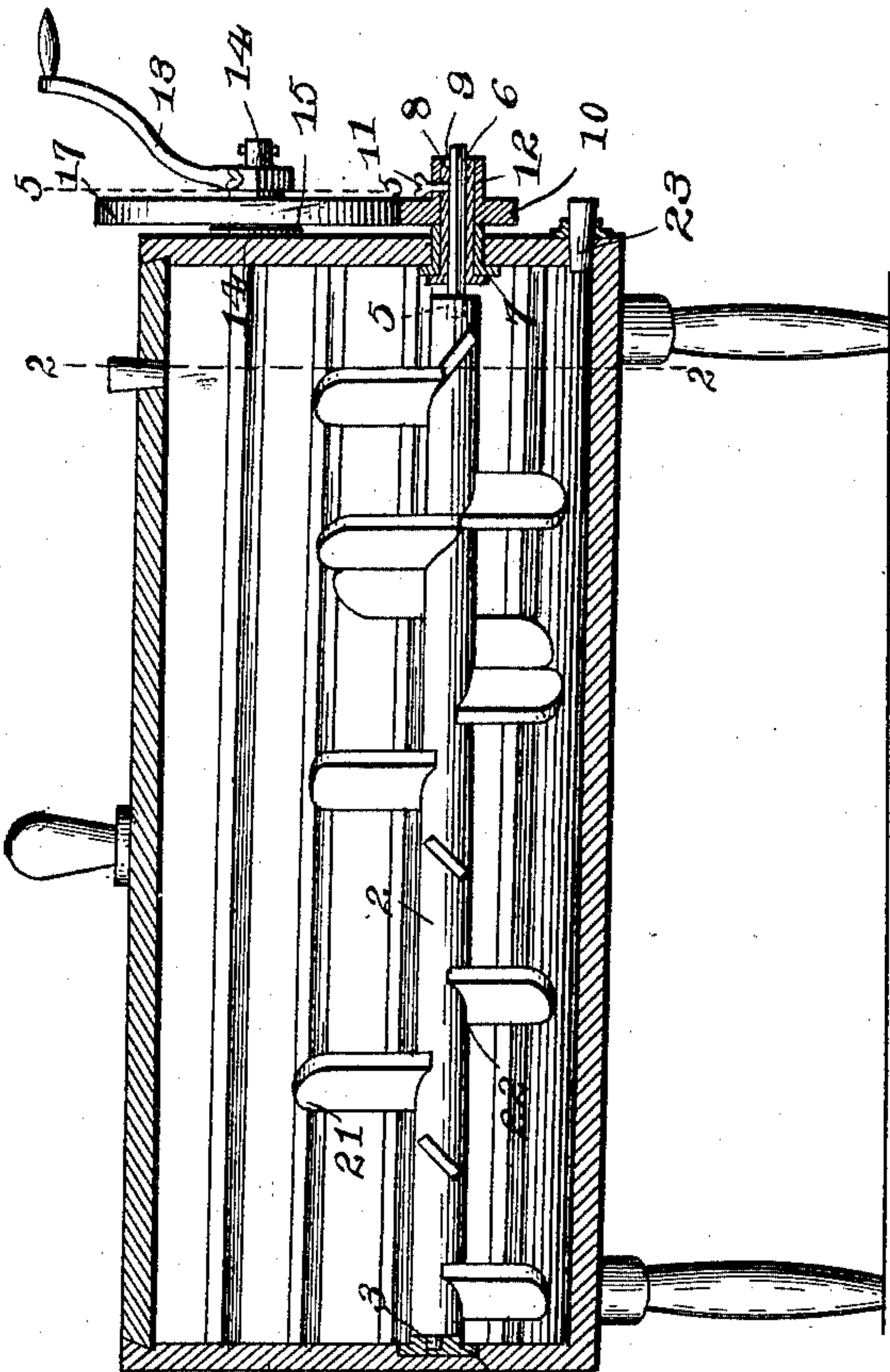


Fig. 1.

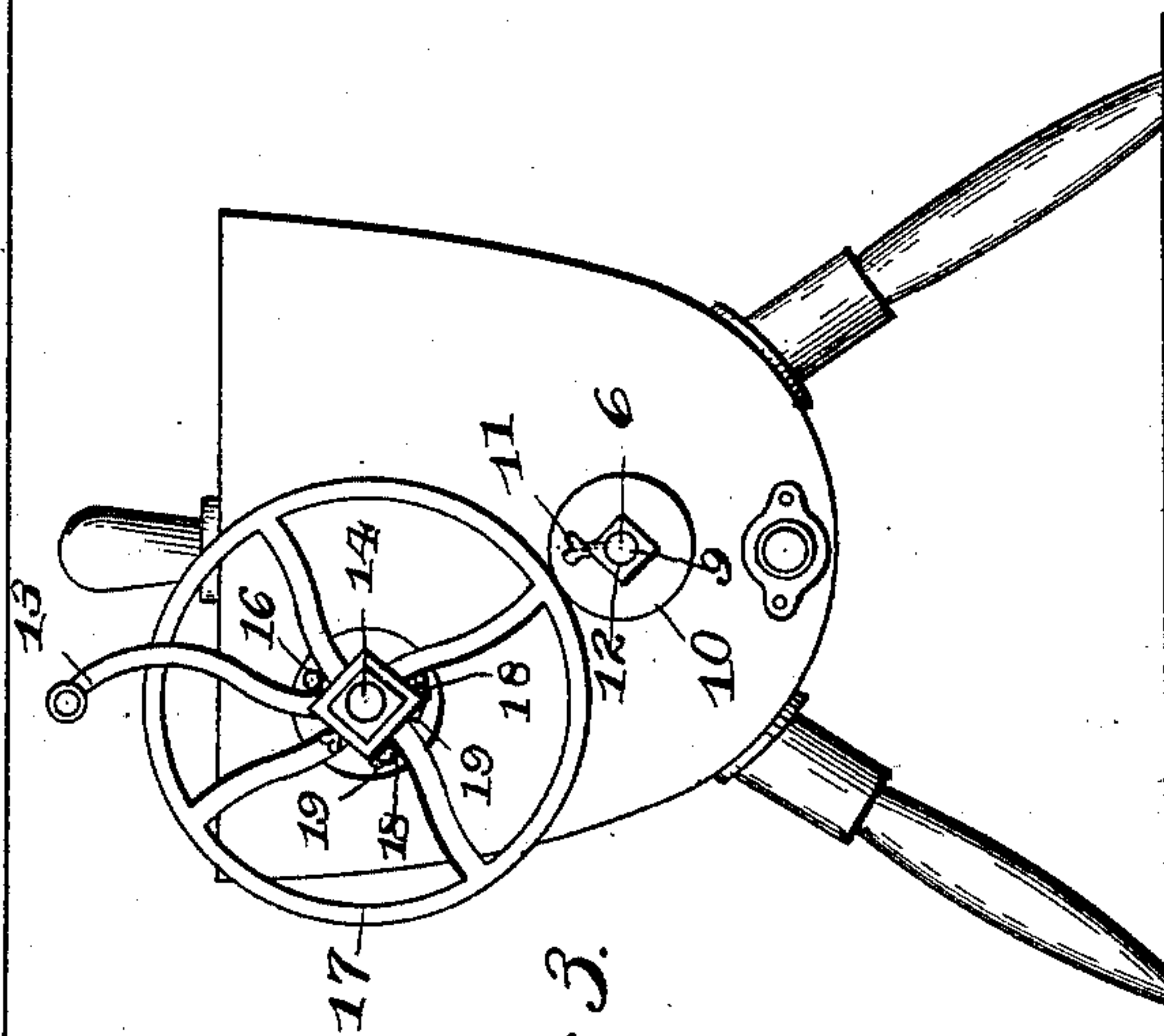


Fig. 3.

Inventor

Eric Silen,

By his Attorneys.

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Witnesses

Chas. Ford.
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UNITED STATES PATENT OFFICE.

ERIC SILEN, OF KELSO, WASHINGTON.

COMBINED CHURN AND BUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 509,772, dated November 28, 1893.

Application filed July 31, 1893. Serial No. 481,998. (No model.)

To all whom it may concern:

Be it known that I, ERIC SILEN, a citizen of the United States, residing at Kelso, in the county of Cowlitz and State of Washington, have invented a new and useful Combined Churn and Butter-Worker, of which the following is a specification.

My invention relates to a combined churn and butter worker, and consists in an improvement upon the construction shown in my former patent, No. 472,830, issued April 12, 1892; the objects in view being to provide a more efficient and inexpensive device possessing advantages in point of simplicity, ease of operation, and rapidity.

Further objects and advantages of my invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a central longitudinal section of a mechanism embodying my improvements. Fig. 2 is a transverse section on the line 2—2 of Fig. 1. Fig. 3 is a front end view. Fig. 4 is a detail view of the stub-shaft for the master-wheel detached. Fig. 5 is a detail view of a portion of the dasher shaft to show the surface groove for the reception of the paddles.

Similar numerals of reference denote corresponding parts in all the figures of the drawings.

1 designates the churn body, in which is longitudinally disposed the paddle shaft, 2, provided at its rear end with a pintle, 3, seated in a socket, 4, in the rear wall of the churn body, and provided at its front end with an angular socket, 5, to receive the extremity of the angular coupling-rod, 6.

7 is a bearing-sleeve which is fixed in a suitable opening in the front wall of the churn-body, and 8 is a concentric rotary sleeve, mounted in said bearing sleeve and provided with an angular bore, 9, in which is slidably fitted the coupling-rod, 6. The friction-roll, 10, is fitted upon the outer end of said rotary-sleeve and is secured in place by means of the set-screw, 11, which passes through a threaded perforation in the squared hub, 12, of said roll and impinges at its inner end against the surface of the coupling-rod

to lock the latter in place. The coupling-rod serves as an extension for the paddle-shaft to enable the latter to be adjusted accurately to the length of the churn-body to take up lost motion caused by wear, shrinkage, &c. The squared hub, 12, of the friction-roll is adapted to receive the operating handle, 13, after the contents of the churn have been worked sufficiently to partially or wholly separate the butter, in order to facilitate the beating of the butter which can be accomplished more satisfactorily by a direct application of the power to the paddle-shaft.

14 represents a stub-shaft which projects horizontally from the front end of the churn-body, and upon it is rotatably mounted the master-wheel or power-wheel 17, to engage the pinion 10. The stub-shaft is provided with a collar or flange 15, secured to the end of the churn-body by means of a pivot-screw 16 and similar set-screws 18, which engage slots 19, in the collar or flange, whereby the wheel may be adjusted to provide firm frictional contact with the pinion 10.

The paddle-shaft is provided at that part near the front end of the churn-body with a continuous spiral surface groove 22, in which are fitted, in juxtaposition, the paddles 21, whereby they, in effect, form a continuous spiral web, as shown and described in my former patent above mentioned, but the construction herein described is simpler while the effectiveness remains the same. Hence the above arrangement is preferable. This portion of the rotary paddle is termed the paddle proper, in that it is this portion of the device which breaks up the globules of butter and frees the same from the milk. The adjoining portion of the paddle is termed the beater, and here the blades are set farther apart and although arranged in spirally-disposed grooves 22, such grooves are not continuous but broken, as shown. In this way the paddles are spaced or disposed at intervals and are arranged in four radially-projecting rows or series, and adjoining paddles in each row or series are separated at a distance equal to three paddles.

The churn-body is preferably inclined downwardly, slightly, toward its front end or to

ward the draining plug 23, to relieve the contents of the liquid portion as it is separated from the solid portion.

It will be readily understood that the arrangement, as described, of the coupling-rod within the shell formed by the journal at the front end of the paddle-shaft, enables the entire length of the latter to be utilized, and increases the effectiveness of the churn.

Having thus described my invention, what I claim, and desire to secure by Letters Patent is—

1. In a device of the class described, the combination with a churn-body, a rotary dasher arranged therein, a revoluble sleeve connected to said dasher, and a friction roll fixed to said sleeve and provided with a squared hub, of a stub-shaft, means to adjust said shaft toward and from the friction roll, a master-wheel mounted upon said stub-shaft,

and an operating handle provided with an angular eye to engage the hub of the master-wheel, substantially as specified.

2. In a device of the class described, the combination with a churn-body, of a rotary dasher - shaft having a continuous spiral groove at one end and a broken or disconnected series of spirally-disposed grooves at the other end, blades fitted at their inner ends in said grooves, those which are fitted in the continuous groove being arranged in juxtaposition to form a substantially continuous web, and means to operate the shaft, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ERIC SILEN.

Witnesses:

ISAAC L. OSGOOD,
WILLIAM DENCH.