

No. 616,371.

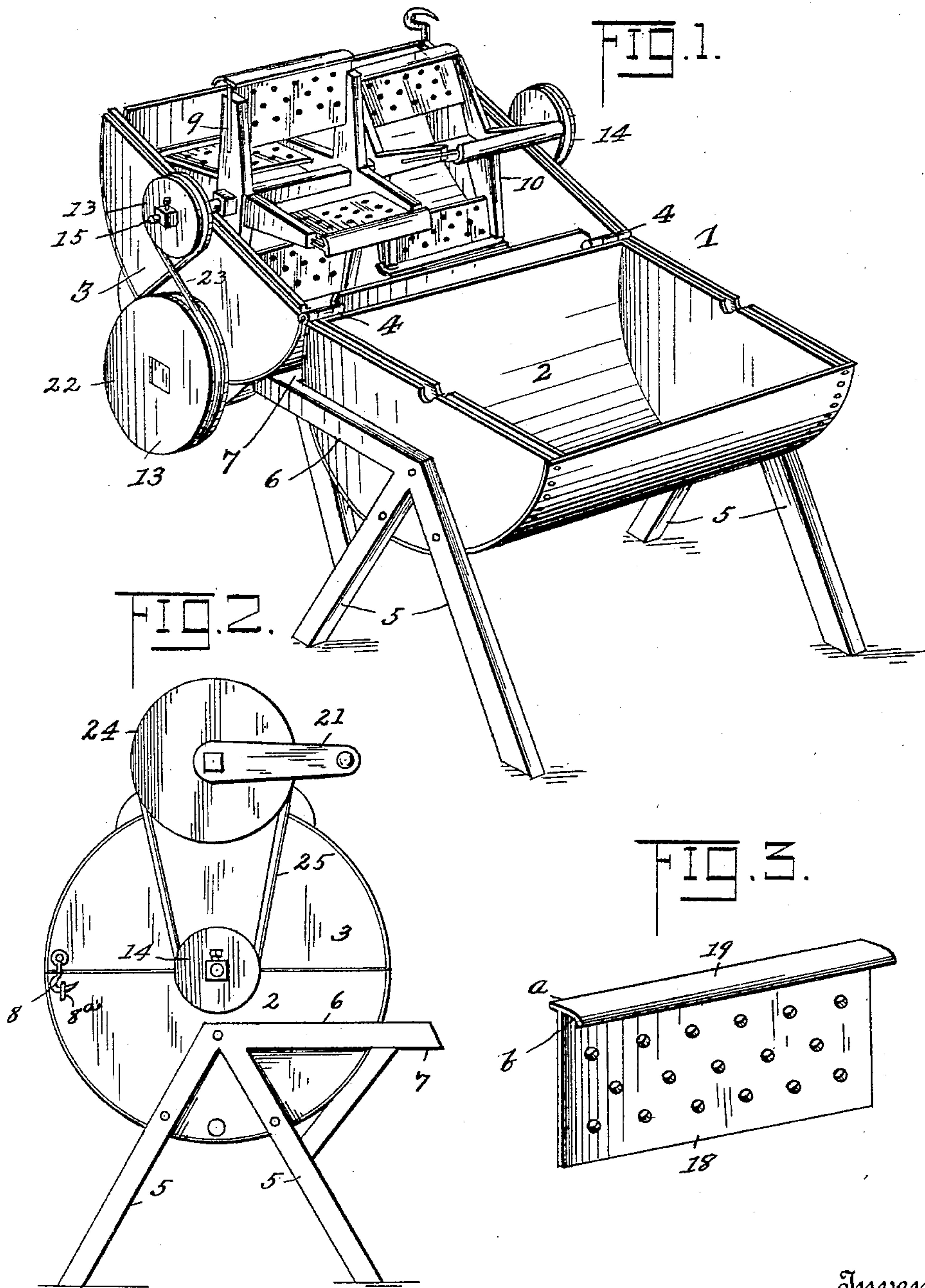
Patented Dec. 20, 1898.

J. A. SWEARENGEN.  
CHURN.

(Application filed Dec. 10, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
*Sam R. Turner*  
*C. C. Sines.*

Inventor:  
*J. A. Swearengen.*  
By *R. A. Barry.*  
His Attorney.

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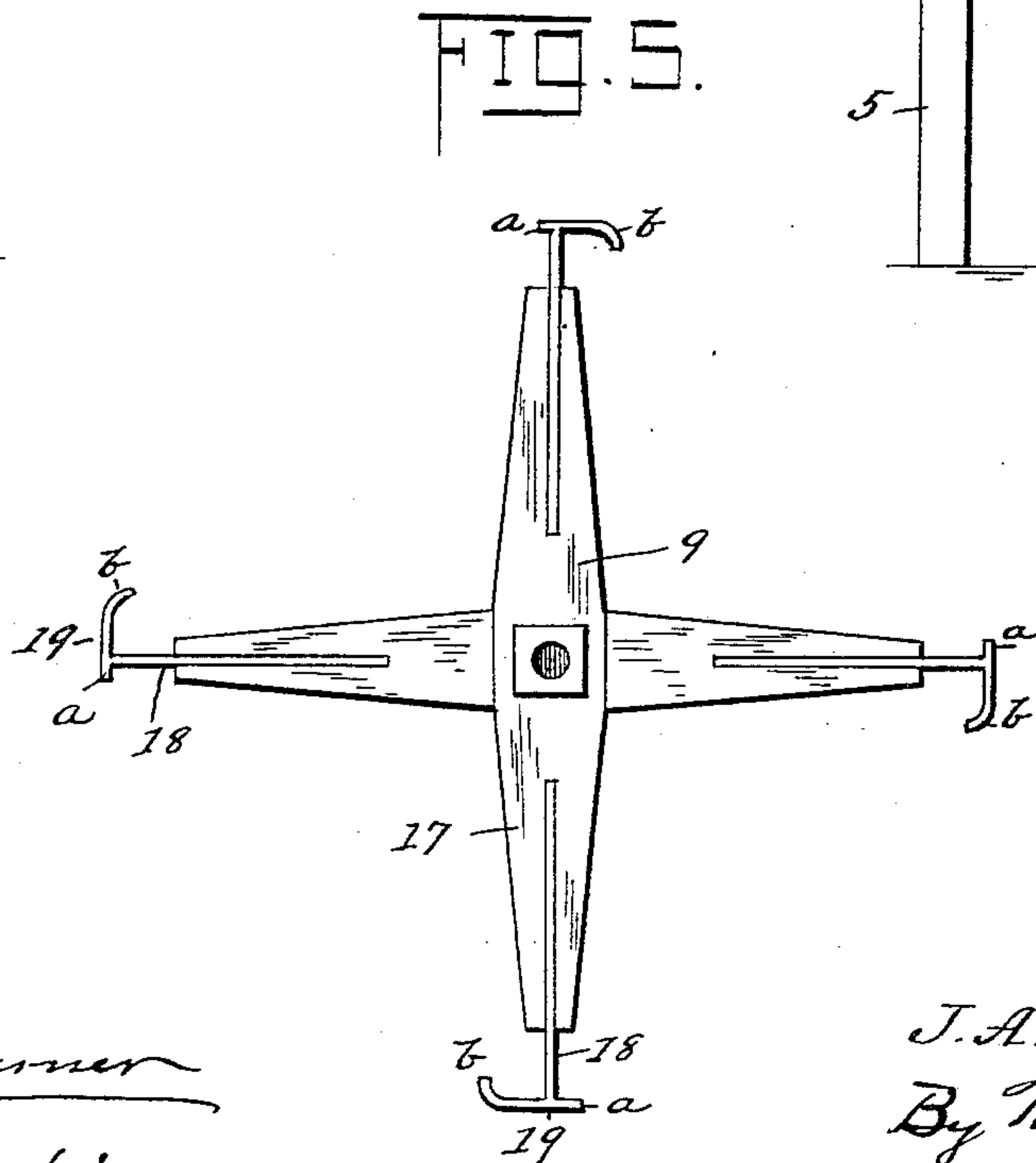
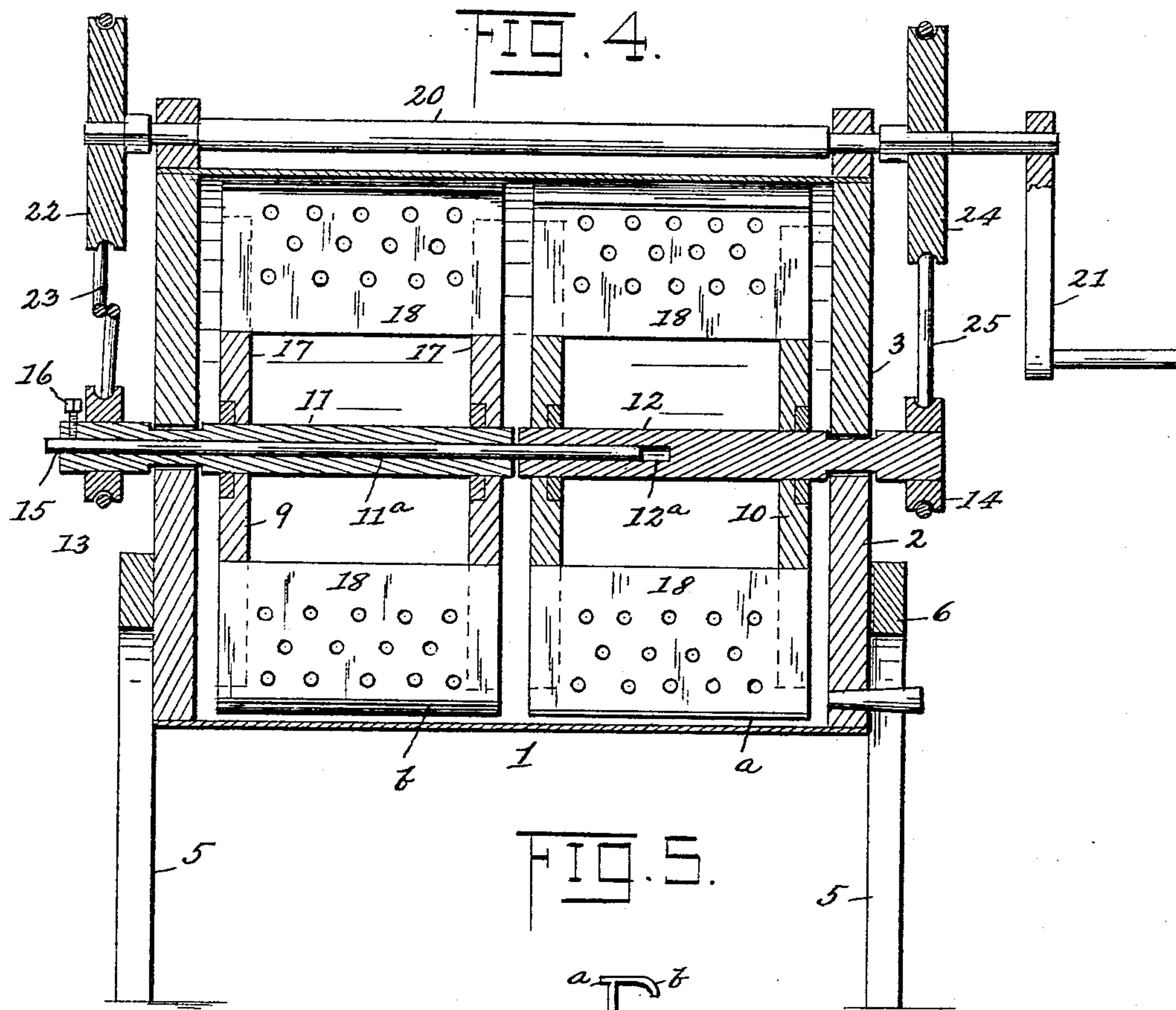
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2 Sheets—Sheet 2.



Witnesses  
*Sam R. Turner*  
*C. C. Jones*

Inventor:  
*J. A. Swearengen,*  
By *W. A. Blacy,*  
his Attorneys.



# UNITED STATES PATENT OFFICE.

JAMES ADEN SWEARENGEN, OF MILAN, MISSOURI.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 616,371, dated December 20, 1898.

Application filed December 10, 1897. Serial No. 661,392. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES ADEN SWEARENGEN, a citizen of the United States, residing at Milan, in the county of Sullivan and State of Missouri, 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 improvements in churns of the multiple-dasher type; and it consists in the novel features of construction, combination, and arrangement of parts hereinafter more fully described and claimed.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the churn, showing the cover and dasher mechanism thrown back. Fig. 2 is an end view with cover closed. Fig. 3 is a perspective view of one of the dasher-blades detached; Fig. 4, a central vertical longitudinal section through the churn and dashers, and Fig. 5 an end view of one of the rotary dasher-frames.

The churn comprises a cylindrical casing 1, consisting of a semicylindrical body portion or receptacle 2, which holds the cream, and a semicylindrical cover 3, united thereto by hinges 4. The said receptacle is mounted upon legs 5, each provided with a rearwardly-extending arm 6, said arms being connected by a cross-bar 7, which serves to support the cover 3 when the latter is opened and thrown back, as shown in Fig. 1. The cover may be closed by a hook 8 thereon engaging an eye 8<sup>a</sup> on the receptacle or any other suitable locking device, and suitable packing may be interposed at the meeting edges of the parts to prevent leakage.

Carried by the cover are two dasher-frames 9 10, each mounted on a hub or shaft 11 12, having bearing adjacent to their outer ends in the opposite ends of the cover and carrying at their outer ends grooved pulleys 13 14. The hub 11 is provided with a continuous longitudinal bore 11<sup>a</sup>, opening through both ends thereof, and the hub 12 with a bore or recess 12<sup>a</sup>, opening through its outer end and extending part way through it. The inner ends of the dasher-frames are supported by and mounted to rotate on a rod 15, extend-

ing through said bore 11<sup>a</sup> and into the bore 12<sup>a</sup>. The outer end of this rod is held by a set-screw 16 on the hub 11 and projects far enough beyond the same to be conveniently grasped and withdrawn when it is desired to disconnect the dashers. The hubs or shafts 11 12 are fitted in semicircular bearing-recesses formed in the lower edges of the end pieces of the cover and turn therein and in complementary bearing-recesses formed in the upper edges of the end pieces of the receptacle.

The sides of the dasher-frames are formed by bars arranged in pairs at each end of the hub and secured thereto, the bars of each pair being disposed at right angles to each other and forming a series of radial arms 17. The two series of arms of each dasher-frame thus constructed are also arranged in transversely-alined pairs, and each arm is provided in its outer end with a transverse groove or slot for the reception of one side edge of a dasher 18, each dasher being carried by two transversely-alined arms and fitted to slide snugly in the grooves or slots therein. Each dasher, as shown in Fig. 3, consists of a thin metallic plate having its body portion perforated and provided with an approximately L-shaped outer end 19, forming a straight rear flange *a* and a scoop-like front flange *b*. The function of this scoop-like front flange is to force up and retain the cream on the dasher until it passes through the perforations therein and falls upon the next adjoining dasher and that of the rear flange to prevent the cream from flowing off the dasher and sloshing violently against the wall of the churn. The dashers may be conveniently detached by grasping the flanged outer ends thereof and withdrawing them outwardly from the grooves or slots in the arms.

The mechanism for rotating the dasher-frames consists of a drive-shaft 20, mounted in bearings on the top of the cover and carrying at one end a crank 21 and pulley 22, connected with the pulley 13 by a belt 23 and at the other end with a pulley 24, connected with the pulley 14 by a belt 25. By rotating the drive-shaft through the medium of the crank-handle the dasher-frames will be revolved in reverse directions. When the cover



is thrown back and it is desired to detach the dasher-frames, this may be readily and conveniently accomplished by simply disconnecting the belts 23 25, whereupon said frames 5 may be bodily lifted out. After removal said frames may be disconnected from each other by releasing set-screw 16 and withdrawing the rod 15, as will be readily understood.

From the above description, taken in connection with the accompanying drawings, the construction and mode of operation of the churn will be apparent. It will be seen that by mounting the dashers on the cover provision is made whereby said dashers may be 15 readily removed from the receptacle 2 after churning, so that the butter may be conveniently worked while still in the churn. It will also be seen that the dashers are mounted in such manner as to permit of the same being 20 removed with readiness and facility for cleaning or repair. Under ordinary conditions, however, the churn and dashers may be effectively cleaned by partially filling the receptacle 2 with water and then rotating the 25 dashers.

The receptacle 2 is provided with a drain-orifice adapted to be closed by a plug 26. I may provide the cover 3 with a glass panel, through which the contents of the churn may 30 be inspected and the progress of the churning operation determined without removing said cover.

It will be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing 35 from the spirit or sacrificing any of the advantages of this invention.

I claim—

1. A rotary dasher-frame for churns of the 40 class described, comprising in its construction a hub or shaft with which the frame is adapted to rotate, two pairs of bars secured to said hub and constituting the sides of the frame, the bars of each pair being arranged 45 at right angles to each other and forming a se-

ries of radial arms and the arms of the series thus formed being disposed in transversely-aligned pairs and provided at the outer ends thereof with grooves or slots, and a rectangular metallic dasher-plate fitted to slide snugly 50 in the slots or grooves of each transverse pair of arms, said plate being provided with a perforated body portion and an approximately L-shaped outer end forming a forwardly-projecting beating-flange having an inturned 55 edge and a straight rearwardly-projecting stop-flange, the construction being such that the dasher-plate may be detached by grasping the flanged outer end thereof and withdrawing it outwardly from the grooves or 60 slots, substantially as described.

2. In a multiple-dasher churn, the combination of a casing, a pair of reversely-rotating dasher-frames each consisting of a hub with which the frame is adapted to rotate, the hub 55 of one frame being provided with a short bore at its inner end and the hub of the other frame with a continuous bore, two side series of radial arms arranged in transverse alignment and projecting from the hub and formed 70 at their outer ends with grooves or slots, a metallic dasher-plate fitted to slide snugly in the grooves or slots of two transversely-aligned arms, a rod extending through the continuous bore of the one shaft and into the short 75 bore of the other shaft and adapted to be withdrawn longitudinally to disengage the shafts from each other, a set-screw projecting through the hub of one frame and impinging against the shaft to hold the same firmly 80 against retraction, and means for rotating the dasher-frames in reverse directions, substantially as described.

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

JAMES ADEN SWEARENGEN.

Witnesses:

W. L. BEATTY,  
FRANK WOOD.