

No. 625,624.

Patented May 23, 1899.

N. WILLIS.

CHURN.

(Application filed May 4, 1898.)

(No Model.)

2 Sheets—Sheet 1.

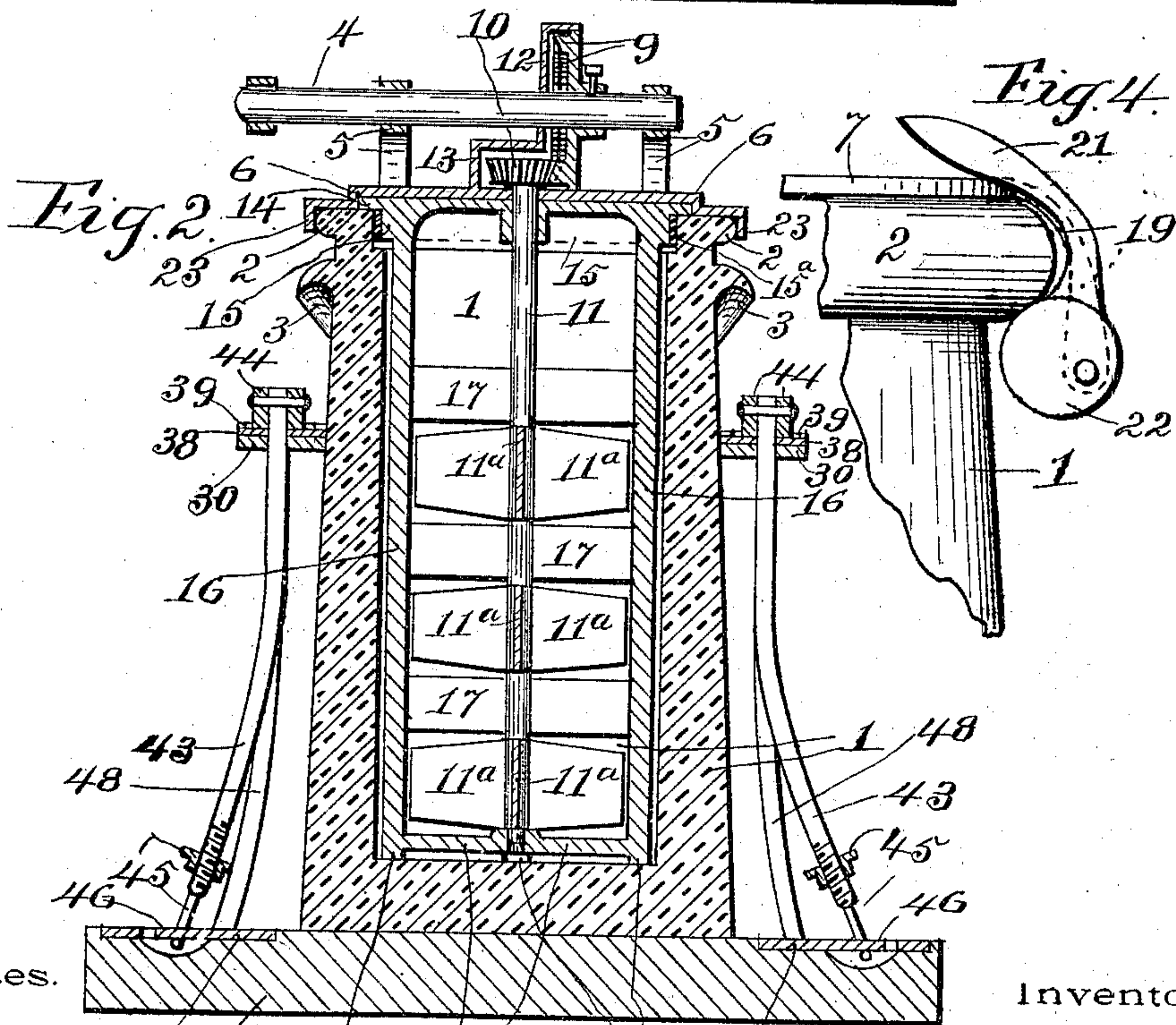
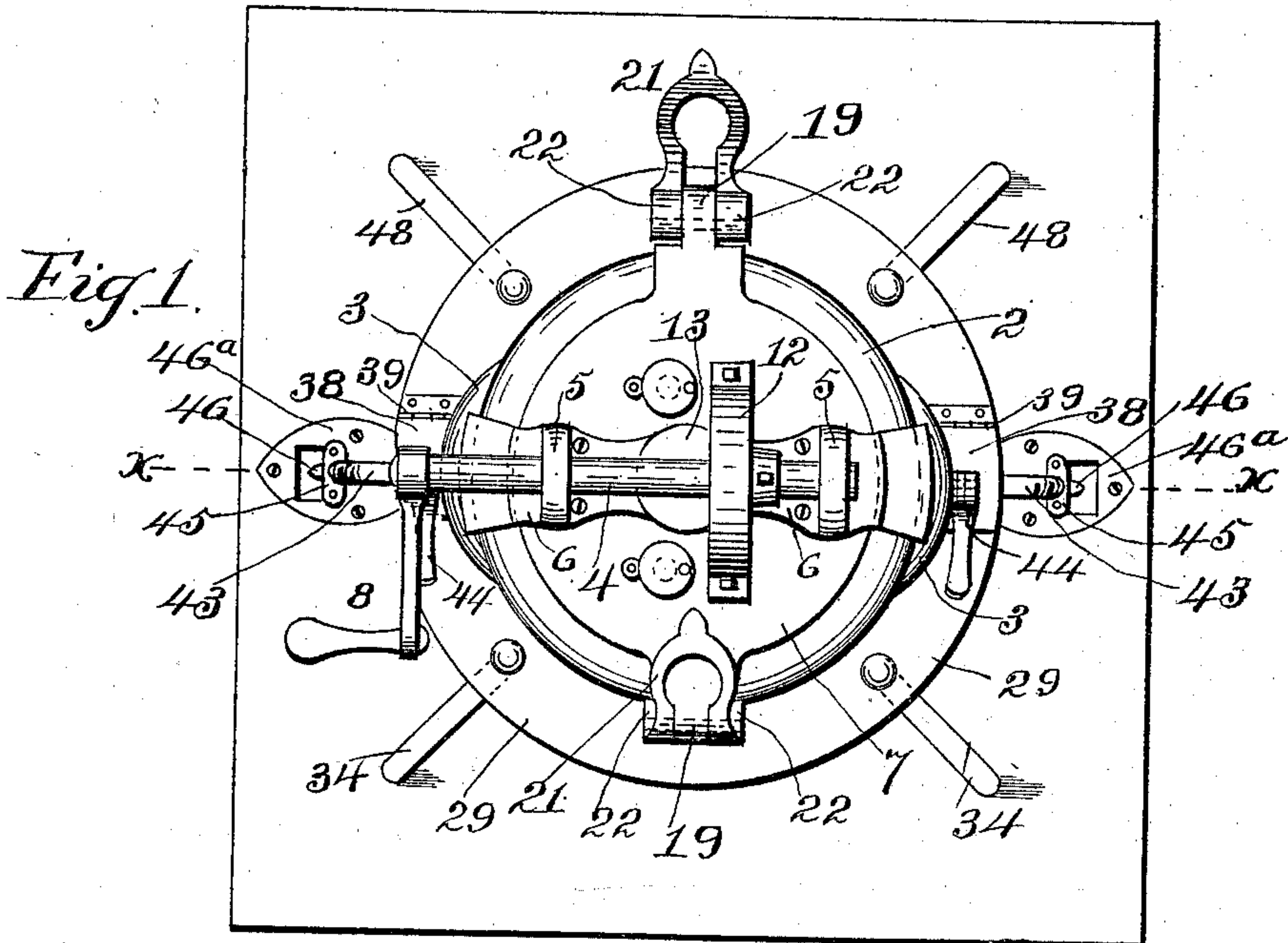
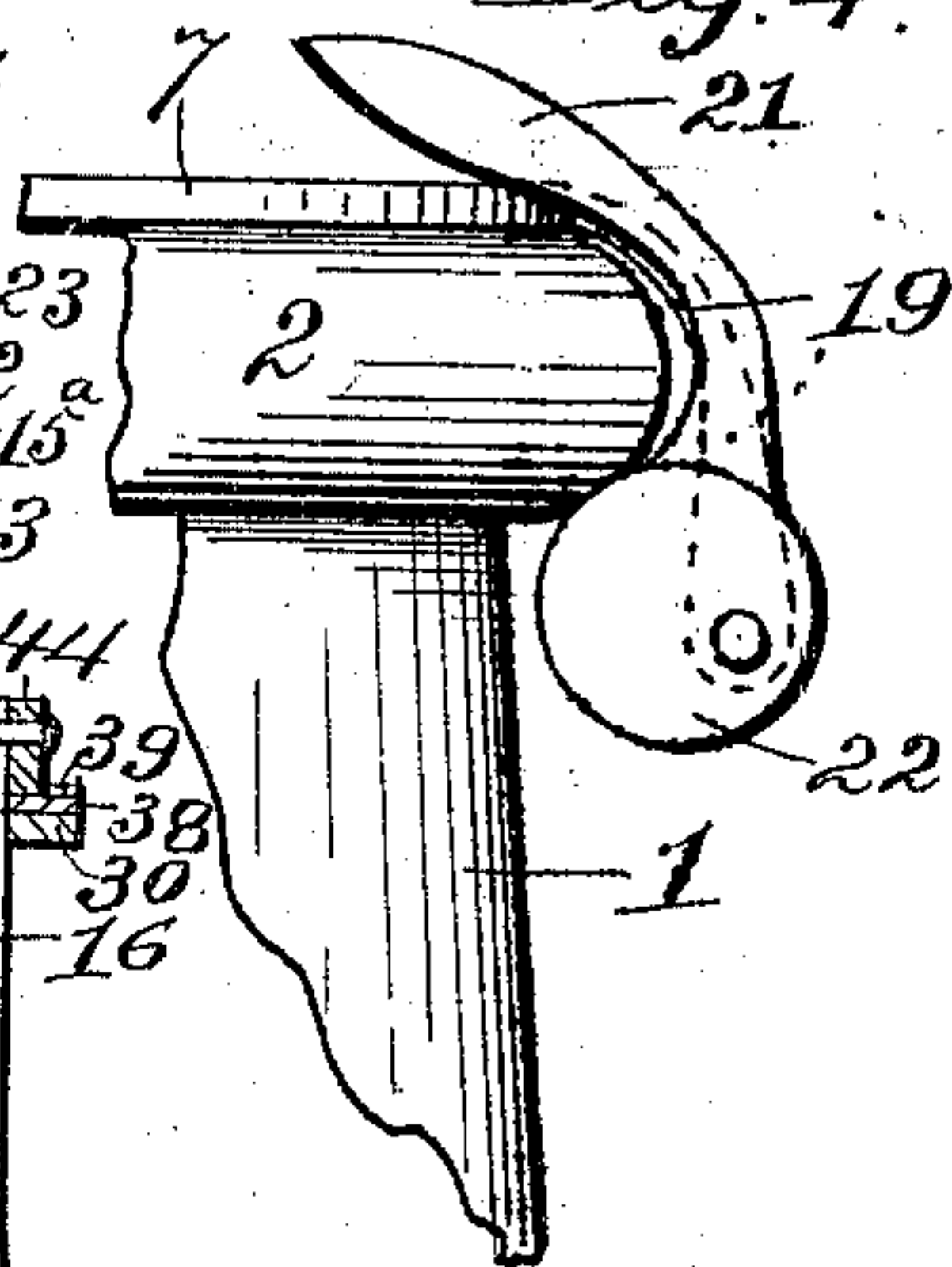


Fig. 4.



Witnesses.

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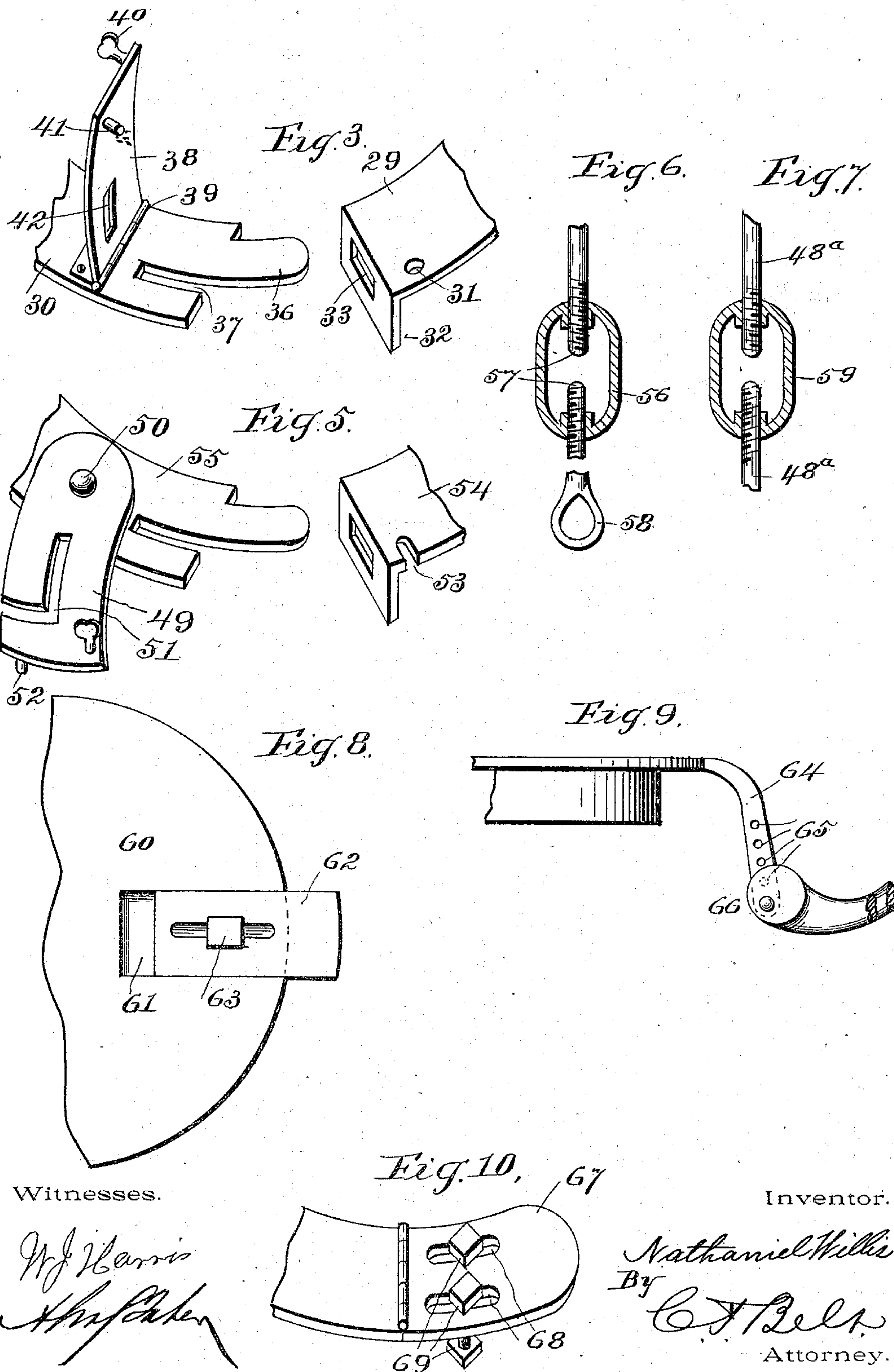
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(No Model.)



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UNITED STATES PATENT OFFICE.

NATHANIEL WILLIS, OF EDENVILLE, MICHIGAN, ASSIGNOR OF ONE-HALF
TO WALLACE H. PECK, OF SANFORD, MICHIGAN.

CHURN.

SPECIFICATION forming part of Letters Patent No. 625,624, dated May 23, 1899.

Application filed May 4, 1898. Serial No. 679,717. (No model.)

To all whom it may concern:

Be it known that I, NATHANIEL WILLIS, a citizen of the United States, residing at Edenville, in the county of Midland and State of Michigan, have invented certain new and useful Improvements in Churns, of which the following is a specification.

This invention relates to churns, and particularly to the class of rotary vertical single-dasher churns, reference being made especially to a cap or cover for churn vessels, means for detachably securing the cap on the vessel, and means for holding the vessel rigidly fixed while in operation.

The prime object of the invention is to provide a churning mechanism and a churn-vessel-holding device of novel and peculiar construction adapted to be applied to ordinary stone jars or like vessels commonly used by dairymen and farmers.

A further object of the invention is to provide a cap or cover of improved construction to carry the dasher and its frame and to support and house the driving mechanism and a special form of locking means upon said cap to hold the latter in the mouth of said vessel.

A still further object of the invention is to provide an improved support or stand for churn-jars or like vessels and an adjustable device for holding jars or vessels of various sizes to the stand.

In the accompanying drawings, forming part of this application, Figure 1 is a top plan view of my invention applied to an ordinary stone jar with one of the locks released. Fig. 2 is a vertical section on the line *xx*, Fig. 1. Fig. 3 is a perspective view of one end of the holder-sections disconnected. Fig. 4 is an enlarged elevation, partly broken away, showing a cam engaging the jar-rim. Fig. 5 is a perspective view of a modified form of holder ends. Fig. 6 is a modification of holder brace-rods. Fig. 7 is a modification of holder legs. Fig. 8 is an elevation of a modified form of cover and arm. Fig. 9 is an elevation of a modified form of cover-ear with cam adjustable thereon. Fig. 10 is a perspective view of a modified form of hinge, with means for increasing and diminishing the size of the jar-holder.

The same numeral references denote the same parts throughout the several figures of the drawings.

The vessel or jar 1 is of ordinary structure, having a mouth-rim 2 and lifting-ears 3.

The driving mechanism consists of a horizontal shaft 4, journaled in brackets 5, projecting from arms 6, secured to the cap or cover 7 and having a crank-handle 8. Secured to the shaft 4 is a gear-wheel 9, which meshes with a pinion 10 on the upper end of the vertical shaft 11, having dashers 11^a.

The gear-housing 12 and pinion-housing 13 are made integral with the arms 6; but they may be separate and secured in place, so as to fully protect the gear and pinion and preserve the same in proper working order.

The cap or cover 7 has a lateral flange 14 and a depending flange 15, adapted to receive one or more gaskets 15^a, according to the size of the jar-mouth, to make a close fit between the said mouth and cap.

Depending from the flange 15 and formed integral therewith is a dasher-frame 16, having cross-arms 17, and terminating at the lower end in a base 18, the center of which forms a journal-bearing for the lower end of the shaft 11, and the corners of which have projections or feet 18^a to permit free passage of the contents of the jar under the frame, and thus prevent any clogging or retention of substances between the frame and jar.

Projecting outward and downward from the cover or cap 7 are depending ears 19, to which are hung cam-locks 21, adapted to be raised to make the cams 22 engage the jar-rim 2, and with the lips 23 of the arms 6 engaging said rim the said cover is locked to the jar. When it is desired to remove the churning mechanism from the jar, it is only necessary to turn the said locks down and the cover is free to be lifted off and carries said mechanism with it.

The adjustable jar-holder consists of two semicircular ring-sections 29 and 30. The ends of the section 29 have an aperture 31 and a depending flange 32, provided with a slot 33. Said section has depending legs 34. The section 30 has at each end a projection or finger 36 to engage the slots 33, support-

ing legs 48, and a slot 37 for a brace-rod 43. A keeper or connecting plate 38 is hinged to the ends of the section 30 at 39 and has a thumb-piece 40, a pin 41 to fit the aperture 5 31, and an opening 42, which registers with the slot 37 to receive one end of the brace-rod 43, having a cam 44 to bear on said plate 38. The other end of said rod has a screw- 10 link 45 to engage a hook 46 of an anchor-plate 46^a recessed into the table or board 47. This holder is placed around the jar after the latter is seated upon the board by simply bringing the section ends together, which will cause the parts just described to fall into 15 proper place, thus securing the two sections 29 and 30 together. Then the screw-links 45 are put in engagement with the hooks 46 and the cams 44 are turned to tighten the brace- 20 rods 43. This holds the hinged plates tightly on the said sections and the jar firmly on the table or board 47. To remove the holder from the jar the cams 44 are released and the hinged plates raised after the links 45 have 25 been disengaged with the hooks 46, which leaves the holder-sections free to be separated and the jar free to be removed from the board or table.

As shown in Fig. 5, the plate 49 is pivoted at 50. It has a slot 51 to permit it to pass 30 around the brace-rod and a pin 52 to engage a notch 53 in the end of the section 54 opposite the section 55.

Fig. 6 depicts a turnbuckle 56 instead of the screw-link, and the brace-rod 57 is in two 35 parts and provided with an eye 58.

The legs 48^a are made in two parts, as shown in Fig. 7, and are provided with a turnbuckle 59 for adjusting the length of the legs.

As shown in Fig. 8, the cover 60 has a groove 40 61, in which the arm 62 is adjustable by means of a set-screw 63.

In Fig. 9 the cover-ear 64 is made longer and provided with a series of apertures 65, in which the cam-lock 66 may be adjusted in 45 accordance with the size of the jar-mouth or extent of the rim.

In Fig. 10 the hinge-plate 67 has slots 68 and studs or bolts 69 to vary the size of the holder.

50 It will be observed that in accordance with my invention it may be applied to any churn vessel or jar now in common use, and no waste of cream or butter is possible.

Having thus described my invention, what I claim as new, and desire to secure by Letters 55 Patent, is—

1. The combination, with a churn vessel and its cover, of a pair of arms carried by the cover and having lips to engage the rim of the vessel, a pair of ears depending from the 60 cover over the rim, and a cam-lock pivoted in each ear below said rim, and adapted to swing vertically against the rim, as set forth.

2. The combination, with a churn-vessel table or board having hooks, of a vessel-holder 65 comprising the ring-sections having legs, and the brace-rods connected to said hooks to adjustably connect the table with the said holder.

3. The combination, with a churn-vessel 70 table or board, having hooks, of a vessel-holder comprising the ring-sections having legs, the adjustable brace-rods connected to said hooks, and the cam-levers on said rods to fix the latter to the holder. 75

4. In a holder for churn vessels, the combination, with a board forming a seat for the vessel and having hooks, of the interlocking ring-sections having depending legs, a keeper- 80 plate connecting the ends of said sections, brace-rods extending through the plates and adjustably attached to the said hooks, and the cam-levers pivoted to the said rods and engaging the said plates, to fix the ring-sec- 85 tions around the vessel.

5. The combination, with a table or board adapted to support a churn jar or vessel, and having inlaid hooks, of a jar or vessel holder comprising two semicircular sections pro- 90 vided with legs, the ends of one section having a slotted flange and a pin-hole, the ends of the other section having a slot, and a finger to engage the said flange-slot, keeper-plates secured to said fingered section and 95 having a pin to engage said pin-hole of the other section, and the brace-rods passing through the fingered section and through the said plates, and provided at one end with a screw-link, and at the other end with a cam- 100 lever, as set forth.

In witness whereof I hereunto set my hand in the presence of two witnesses.

NATHANIEL WILLIS.

Witnesses:

JNO. P. LEE,
GEORGE LEE.