

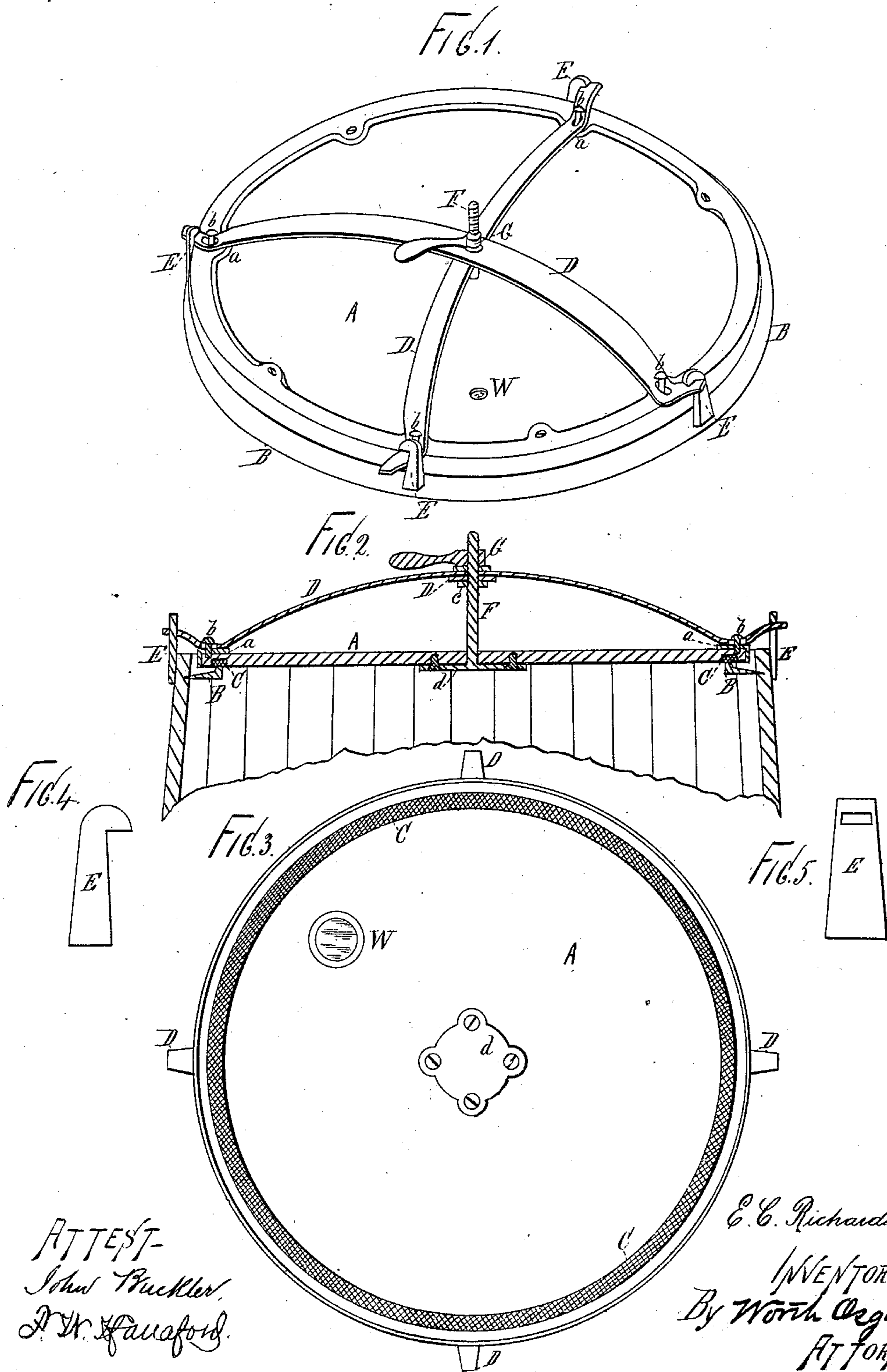
(No Model.)

E. C. RICHARDSON.

CHURN COVER.

No. 257,071.

Patented Apr. 25, 1882.



ATTEST-
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CHURN-COVER.

SPECIFICATION forming part of Letters Patent No. 257,071, dated April 25, 1882.

Application filed February 11, 1882. (No model.)

To all whom it may concern :

Be it known that I, EDWIN C. RICHARDSON, of Poultney, county of Rutland, and State of Vermont, have invented certain new and useful Improvements in Churn-Covers, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention has special relation to means for holding and locking the covers upon barrel-churns, but, as will be understood from the following explanations, the improvements are applicable in connection with the covers of other barrels or vessels of like general character.

The invention has for its object the production of a light, strong, cheap, and durable device by means of which the churn or other cover may be quickly and easily secured in place and as quickly and easily unlocked for removal, be firmly held to its seat without danger of accidental displacement, and in such manner as to insure at all times a close joint between the cover and its seat. To accomplish all of this the improvements involve the application to the cover of spring-metal locking-arms the locking ends of which are made to engage with suitably-disposed locking-ears properly connected with the barrel or churn, and in certain relative arrangements or combinations of parts, details of construction, and principles of operation, all of which will be herein first fully described, and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a churn-cover having a locking device applied thereon, the same being constructed and arranged to operate in accordance with my invention, and shown as mounted upon the ordinary ring-head to which the locking-ears are secured. Fig. 2 is a vertical central section of the device shown in Fig. 1, with the exception that the locking-ears are applied to the barrel or churn body independently of the ring-head. Fig. 3 is a plan view, showing the under side of the cover illustrated in Figs. 1 and 2, and indicating one means of securing

the central standard or bolt, so that it will not be liable to be turned in its seat by movement of the lever or other mechanism which determines the movements of the locking-arms. Figs. 4 and 5 are side elevations of locking-ears detached, showing two forms of the many which may be employed.

In all these figures, calculated to exhibit the character and scope of the invention and the best means which I have devised for applying it, like letters of reference, wherever they occur, indicate corresponding parts.

A is a cover of a churn or other vessel shown as resting upon a metallic ring-head, B, secured in the chine or open mouth. Between this cover and the ring-head is the joint which it is desired to make perfectly tight or secure against leakage.

C is the ordinary cork or equivalent gasket, forming a yielding seat for the cover. For all purposes of the invention the cover may be otherwise seated, inasmuch as the locking device is independent of the form, location, and arrangement of the cover.

D D are the locking-arms or locking-levers by which the cover is held in place. These are shown as crossing each other over the center of the cover, their ends projecting beyond the periphery of the cover and engaging with the locking-ears E E. A central bolt or standard, F, is secured to the cover and passes up through perforations provided for it in the locking-levers. A nut, G, having a convenient hand-piece or handle for turning it is movable up and down upon the screw-threaded standard F. The arms or levers D D are made in the form of springs, amply strong for the purpose; and in their construction I prefer to employ steel of good quality. Other metal or material might of course be employed; but steel is regarded as the best, most durable, and affords the best results. The arms or levers are bent at their ends, substantially as shown, so as to bear upon the cover or upon convenient projections upon the binding-rim shown at *a a*, and their extremities project beyond the margin of the cover, as above indicated. Suitable screws or equivalent keys, *b b*, pass through elongated perforations in the

spring-levers, near the points of contact with the cover or rim, and these operate to hold the springs in proper place, while they are permitted to move slightly back and forth upon their bearing-points. The ends of the springs beyond their bearing-points being short and strong are sufficiently rigid to lock the cover tightly.

The locking device being properly mounted upon the cover, and the latter seated and adjusted so as to bring the ends of the spring-levers under the locking-surface of the locking-ears, it is plain that by turning nut G down upon standard F the middle portions of the springs will be forced down toward the cover, and this will cause their ends beyond the bearing-points to rise. In this way the cover is locked. To prevent the springs from being compressed unnecessarily a set-nut, c, is placed under them upon the standard F, and this determines the extent of their movement. To unlock the cover or to release the levers from engagement with the ears it is only required to unturn nut G, when the elastic force of the springs will cause them to automatically assume their original positions.

Any number of spring-arms might be employed; but two crossing each other, as indicated in the drawings, will be found amply sufficient. The form of ear shown in Fig. 4 is most convenient for use, for the reason that it enables one to most quickly adjust the cover in place for locking; but the spring-levers might be used with the form shown in Fig. 5. It will be observed that when the central parts of the springs are forced down toward the cover the ends not only tend to rise, as above explained, but they are also thrust outwardly. So when the end of the spring is brought into proper relation with the opening in the ear, as shown in Fig. 5, the outward thrust causes the end to enter the opening, and the upward tendency makes the bearing which completes the lock.

The ears may be mounted upon the ring-head or suitably secured to the body of the vessel.

For convenience of manufacture and assembling for use the springs are made substantially alike. By their use no attachments are required to compel the unlocking movement, as in other forms wherein rigid levers are employed.

Under the action of nut G the standard F

might be liable to turn unless suitably secured, and I secure it preferably by a simple spider, d, bearing against the under side of the cover, though other means may be readily devised for this purpose.

The nut G is perhaps the simplest and best means likely to be employed for compressing the central parts of the spring-arms; but obviously like purposes could be accomplished by securing a cam upon standard F, the turning of which would force the springs downwardly, and other equivalent means would accomplish the same object.

W is a transparent or translucent bit of material placed in the cover to afford means of inspecting the contents of the covered vessel. It forms no part of the invention and may be omitted.

The device constructed and arranged to operate substantially in accordance with the foregoing explanations is found to admirably answer the several purposes or objects of the invention, as previously stated.

Having now fully described my invention, what I claim as new herein, and desire to secure by Letters Patent, is—

1. The combination, with a vessel and its cover, of the spring locking-levers, the central standard secured to the cover, the adjustable nut upon said standard, and the locking-ears upon which the ends of the springs bear, substantially as set forth.

2. In a locking device for a churn or similar cover, the spring locking-levers bearing upon the edge of the cover, their ends projecting beyond said edge and adapted to enter and bear against the locking-ears, in combination with means for compressing their central parts in order to throw their ends outward and upward and hold the springs in such position, substantially as shown and described.

3. In combination with the spring locking-levers, the central standard secured to the cover and provided with adjustable nuts above and below the crossed springs, substantially as and for the purposes specified.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

EDWIN C. RICHARDSON.

Witnesses:

FRED S. PLATT,

EMERSON B. WAITE.