(No Model.)

3 Sheets—Sheet 1.

J. M. CURTICE.

CchurN.

No. 366,157. Patented July 5, 1887.

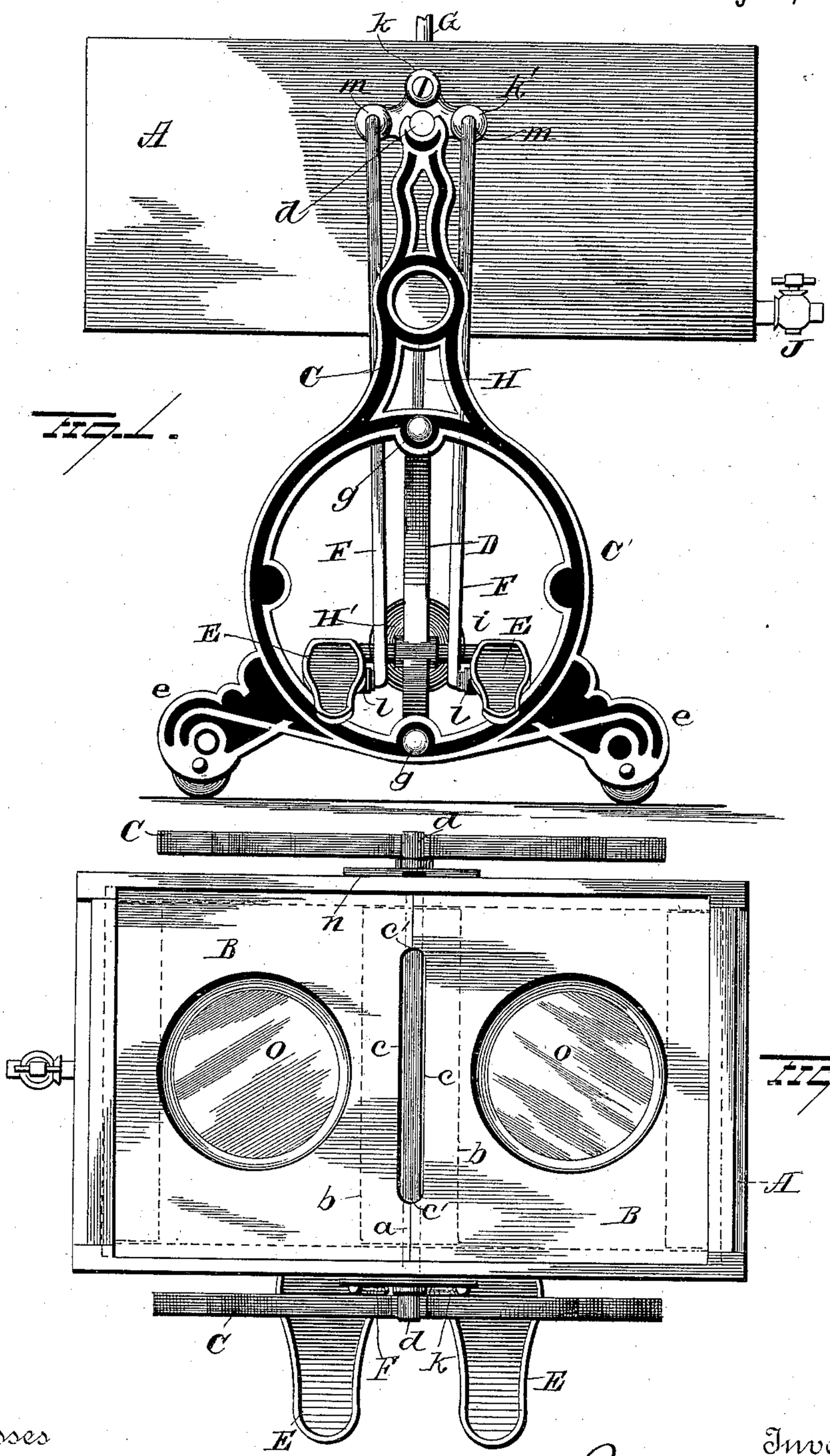


Fig. 1.

Fig. 3.

Witnesses
Geo. F. Downing
Albert Popkins

Inventor
Jesse M. Curtice
By his Attorney
H. A. Seymour

(No Model.)

3 Sheets—Sheet 2.

J. M. CURTICE.

CHURN.

No. 366,157. Patented July 5, 1887.

Fig. 2.

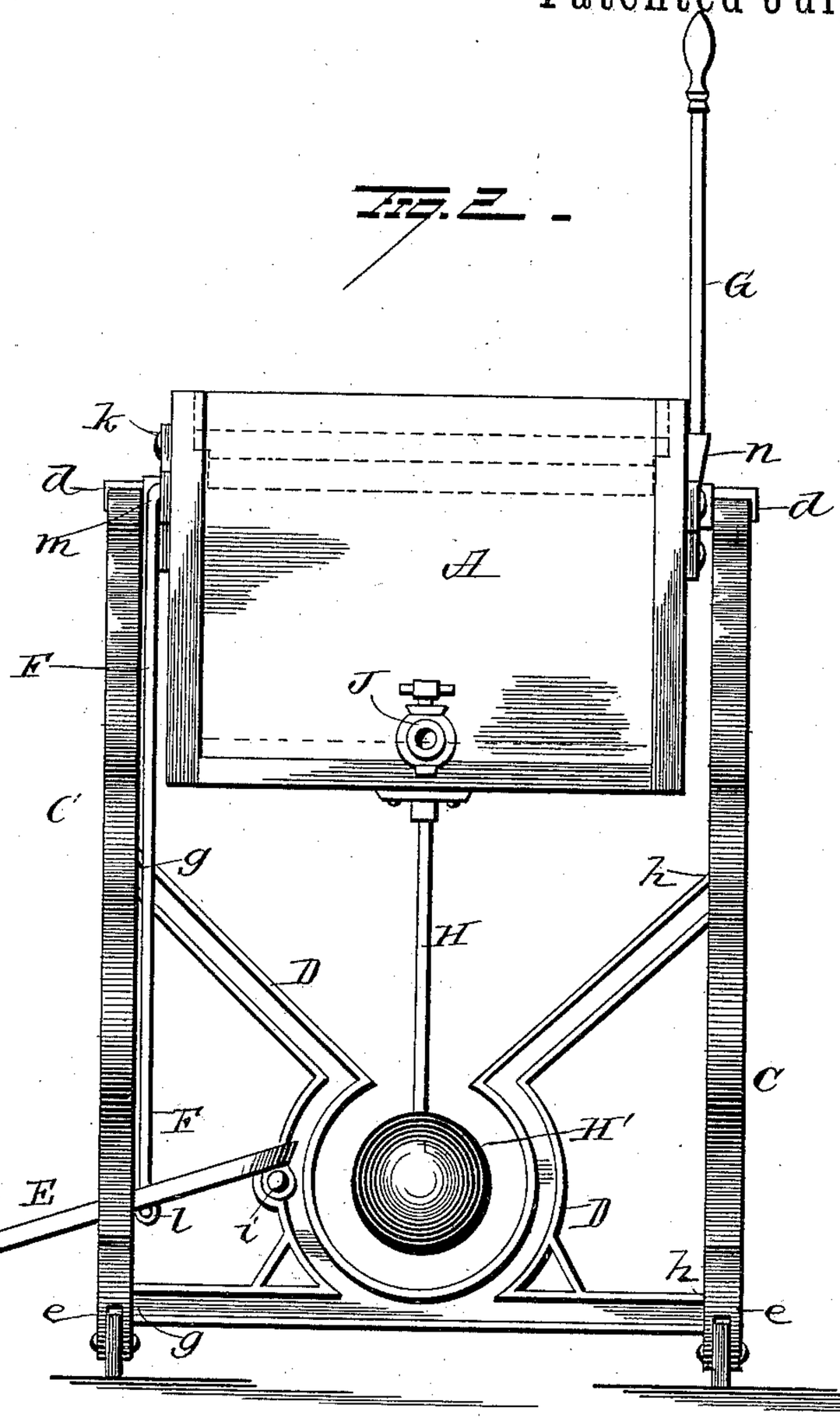
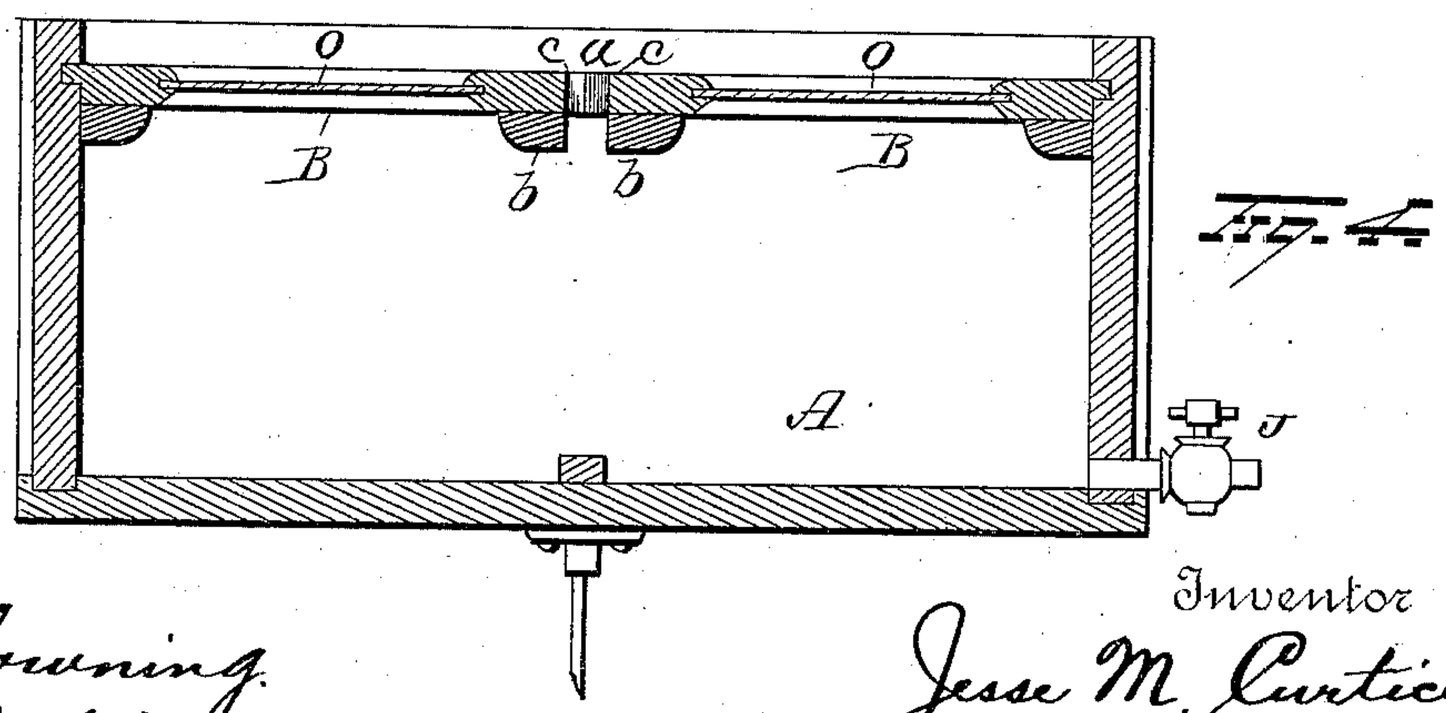


Fig. 4.



Witnesses
Geo. F. Downing.
Albert Popkins.

Inventor
Jesse M. Curtice

By his Attorney
H. A. Seymour

(No Model.)

3 Sheets—Sheet 3.

J. M. CURTICE.

CchurN.

No. 366,157. Patented July 5, 1887.

Fig. 5.

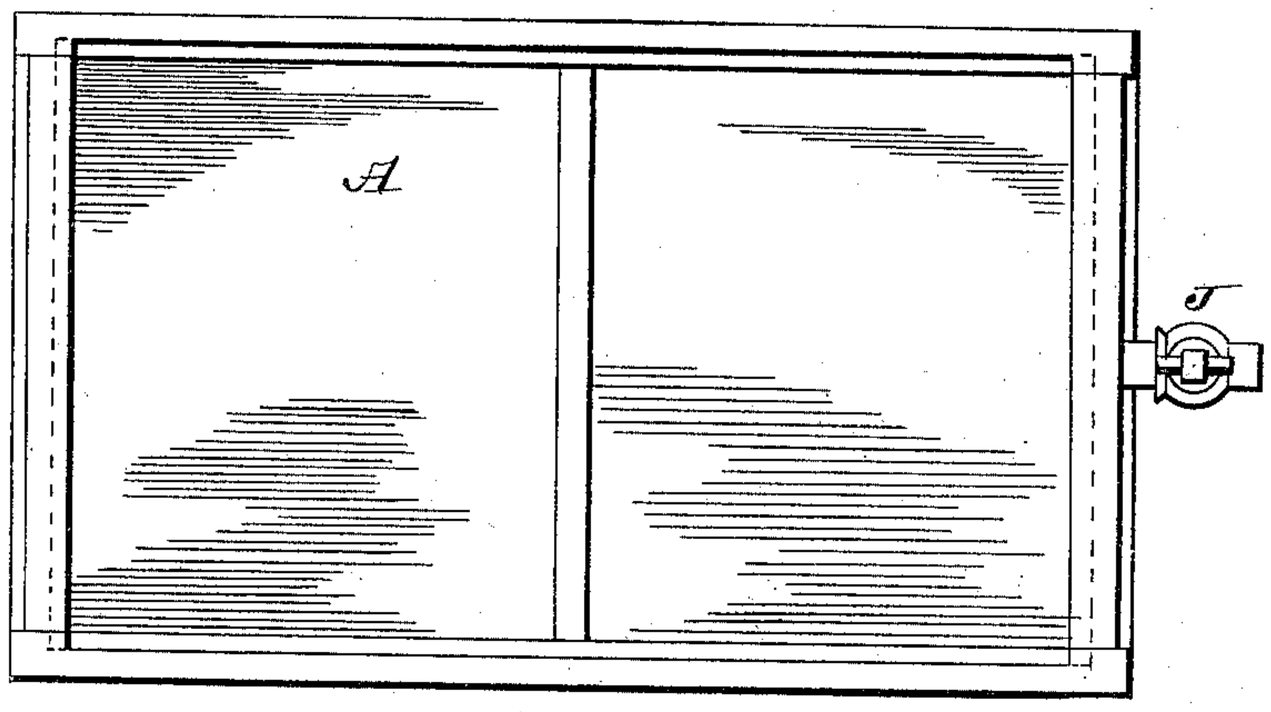
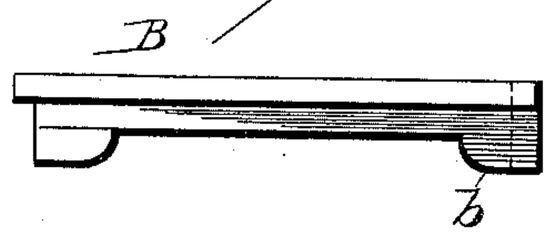


Fig. 6.



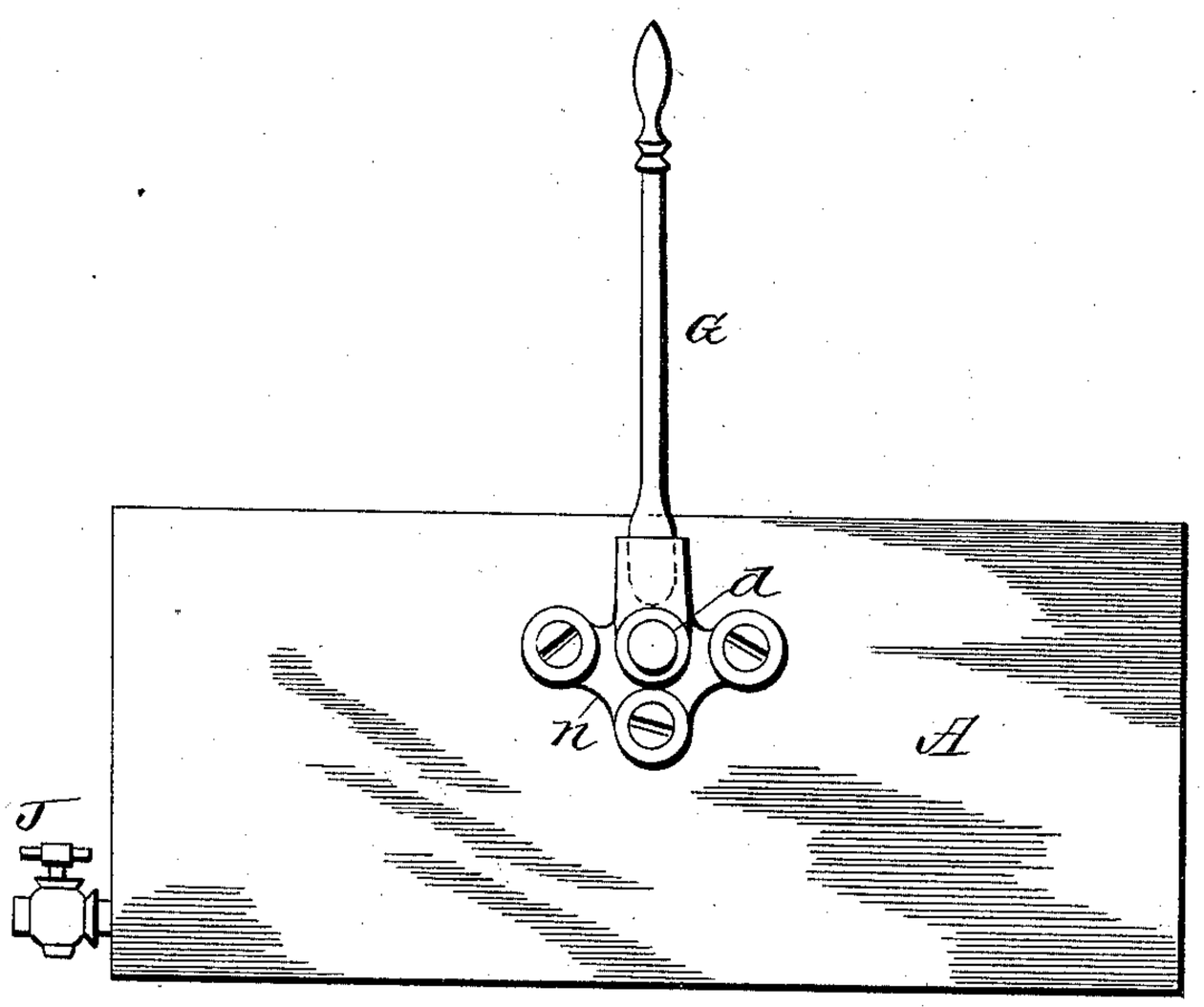


Fig. 7.

Witnesses
Geo. F. Downing
Albert Popkins

Inventor
Jesse M. Curtice
By his Attorney
H. A. Seymour

UNITED STATES PATENT OFFICE.

JESSE M. CURTICE, OF LOUISVILLE, KENTUCKY.

CHURN.

SPECIFICATION forming part of Letters Patent No. 366,157, dated July 5, 1887.

Application filed March 10, 1887. Serial No. 230,427. (No model.)

To all whom it may concern:

Be it known that I, JESSE M. CURTICE, of Louisville, in the county of Jefferson and State of Kentucky, 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.

My invention relates to an improvement in churns, the object being to provide a simple, durable, and efficient device that can be operated by foot or hand power in a manner that requires but little labor to effect the churning operation in an expeditious manner.

A further object is to construct a churn to admit a current of pure atmospheric air into the interior of the same while the churning process is being executed, to expedite this operation and give better results.

A further object is to produce a churn that will, from its manner of construction, allow the entire interior of the cream-receiving chamber to be exposed to view during the operation of churning, and, further, that will afford a ready means of access to the interior for cleansing purposes.

A further object is to construct a churn that may be rapidly manufactured in quantity at a low initial cost to the producer.

With these objects in view my invention consists in certain features of construction and combination of parts, that will be hereinafter described, and pointed out in the claims.

Referring to the drawings making a part of this specification, Figure 1 is a side elevation of the churn. Fig. 2 is an end elevation of the device. Fig. 3 is a plan view of the churn. Fig. 4 is a side elevation in section of the cream-chamber. Fig. 5 is a top view of the interior of the cream-chamber. Fig. 6 is an edge view of one of the lids of the cream-chamber. Fig. 7 is a side elevation of the rear side of the churn.

A is the cream-chamber of the churn. It is preferably made of wood, rectangular in form, with the several pieces composing it joined in a workmanlike manner by any approved method to insure stability and tight joints at points of juncture of the parts. The interior surface, near the top edge of the cream-chamber A, is rabbeted on the sides and channeled at the ends to receive and support the duplex lids B, which are made to neatly fit into the supports just described.

The lids B are of equal length and joint at the center *a* of the box or cream receptacle. This point of juncture is re-enforced by strips or battens *b*, secured on the lower surface of the lids. These battens *b* are beveled on one edge, the opposed edges *c* being slightly cut away to permit the easy introduction of the lids into place on the chamber A. The edges *c* of the lids B are cut away from the points *c'* to produce an opening into the chamber for the introduction of air. The lids are each provided with a glazed opening, O, on their top surfaces to afford a view of the interior of the cream-chamber A. The chamber A is mounted upon the brackets C, that are notched upon their top edges to receive the trunnions *d*, which project from the sides of the chamber A at opposite points. The lower portion of the brackets C C are widened to form rings C' C', on the base of which the extended portions *e e e e* are integrally formed to provide a proper support to the churn, pivoted rollers being attached to the free extremities of the projections *e e e e* to afford a means of easy removal of the device from place to place.

Between the upright brackets C the brace D is secured by screws or bolts at the points *g g h h*, thus affording a stable support at these points to stiffen the supporting bracket frame of the churn. The brace D is constructed to afford a pivotal support to the pedals E E, which are hinged at their front ends to a transverse bolt, *i*, that is affixed to the brace D, as shown in Fig. 2. The pedals E E are also loosely connected to the links F F, that project upwardly and hook into the lateral extensions *k'* of the trunnion-plates *k n*. The links F F are simply metal rods, the lower ends of which are bent at a right angle to enter perforated ears *l*, formed on the lower side of the pedals E E. The upper terminations *m m* of these links are bent to hook into the holes made for their reception in the plates *k*, as before stated, and as these upper hooked ends rest in a vertical plane—that is, at right angles to the position of the pedal-connecting hooks—a secure attachment of the links to chamber

A and pedals E E is produced, to permit them to transmit the vertical vibration of the pedals to the cream-chamber A and cause it to oscillate on its trunnions *d*, the plane of its vibrations being at a right angle to that of the pedals.

The trunnion-plate *n*, that is affixed to the rear face of the cream-chamber A, is constructed with a socket to receive the lever G, and thus afford a means of vibrating the chamber A by hand-power, this lever being removable at will.

Upon the under side of the chamber A the pendulum-rod H is attached at a central point, a ball or weight, H′, being secured at the lower termination of the rod H. The ball H′ is preferably made of such a proportionate weight as to counterbalance the liquid contents of the churn when the same is in use. The brace D is given such a shape that while it is ornamental and of ample strength or rigidity, an opening is formed near its center to allow the pendulum-ball H′ to freely vibrate, while the length of its rod H is sufficient to give proper momentum to the churn-chamber and aid the easy and continuous vibration of the same when it is in operation.

When this device is to be used, the cream to be operated upon is deposited in the receiving-chamber A and both lids placed in close adjustment with the ledges and grooves formed on the edges of the chamber for their support. A quick vibration of the chamber A by the movement of the pedals E E will cause the cream to dash violently from one end of the chamber to the other alternately. The impact of the liquid upon the ends of this box will break the butter-globules and cause a rapid liberation of the same from the whey. This operation is greatly facilitated by the introduction of atmospheric air into the agitated mass of cream and contained butter, as the action of the air has a tendency to disintegrate the globules and burst their sacks. As the cream is being dashed in its containing-chamber A it will be thrown up against the glass that is inserted in the lids B, and the formation of butter-granules will be plainly shown through this transparent wall by its deposition on the inner side of the glass wall. When the churning is completed, the milk or whey can be drawn off at the spigot J and a lid taken off to facilitate the removal of the butter for further manipulation to complete it as an article of use.

Many slight changes might be made in the constructive features of this device without exceeding the scope and spirit of my invention. I do not therefore desire to restrict myself to the exact forms shown; but,

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

1. In a churn, the combination, with a rectangular cream-chamber provided with two lids having an air-slot between them, and with two oppositely-located trunnions secured to the cream-chamber, of standards having bearings for the trunnions and pedals, and links connecting the pedals to the cream-chamber, substantially as set forth.

2. In a churn, the combination, with a rectangular cream-chamber provided with glazed lids, the meeting edges of which are cut away to form an opening or slot for the passage of air, and with trunnions secured to the sides of said chamber, of standards having bearings for the trunnions, pedals, links connecting the pedals to the cream-chamber, and a pendulum attached to the lower side of the cream chamber, substantially as set forth.

3. In a churn, the combination, with a rectangular cream-chamber provided with lids having transverse strips secured to their lower sides, and having their meeting edges cut away to form an opening for the passage of air, and with trunnions secured to the sides of the cream-chamber, of vertical standards having bearings for the trunnions, pedals, links connecting the pedals to the cream-chamber, and a pendulum secured to the lower face of the cream-chamber, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JESSE M. CURTICE.

Witnesses:
P. S. KINKEAD,
E. R. SPROWL.