

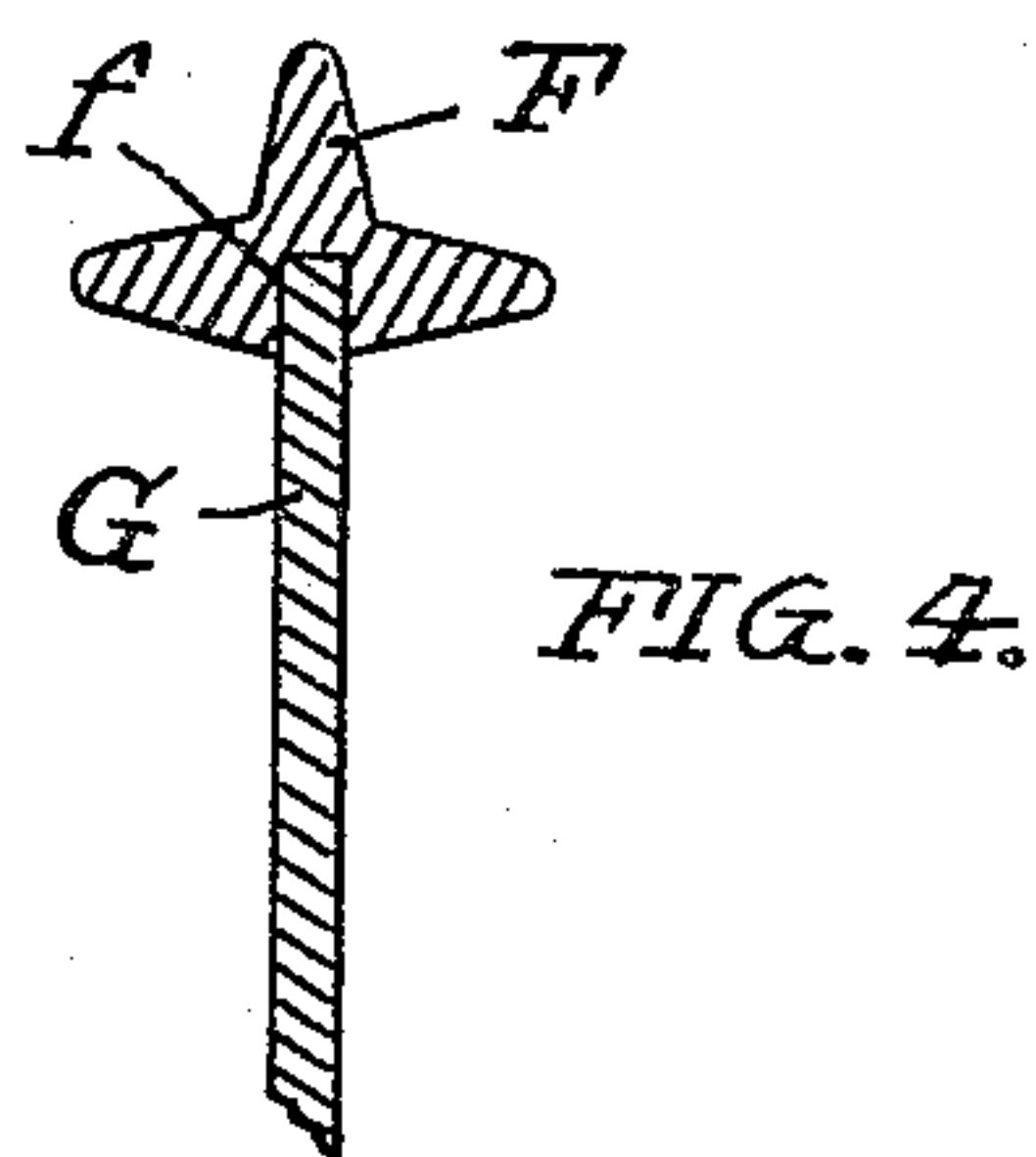
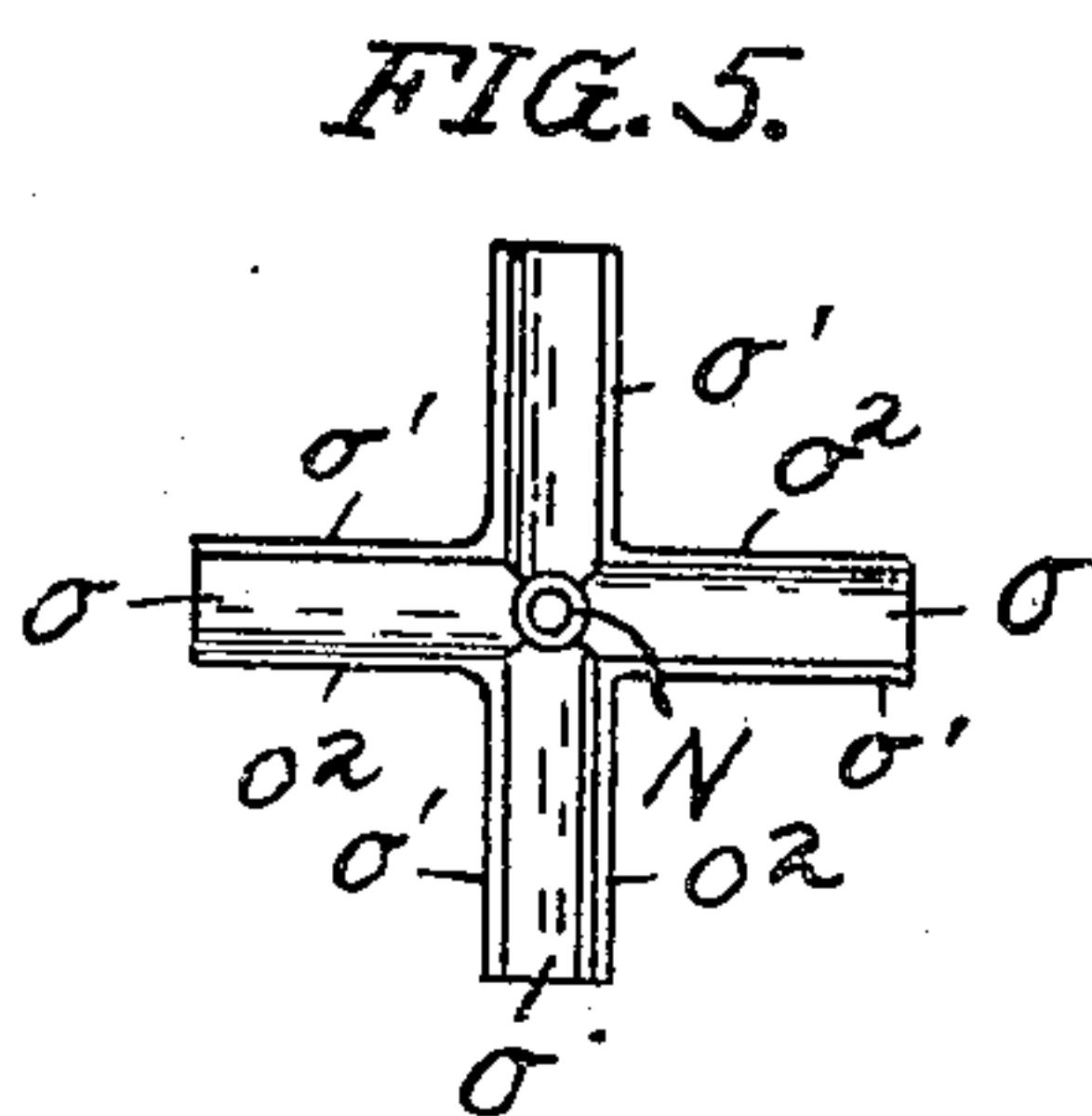
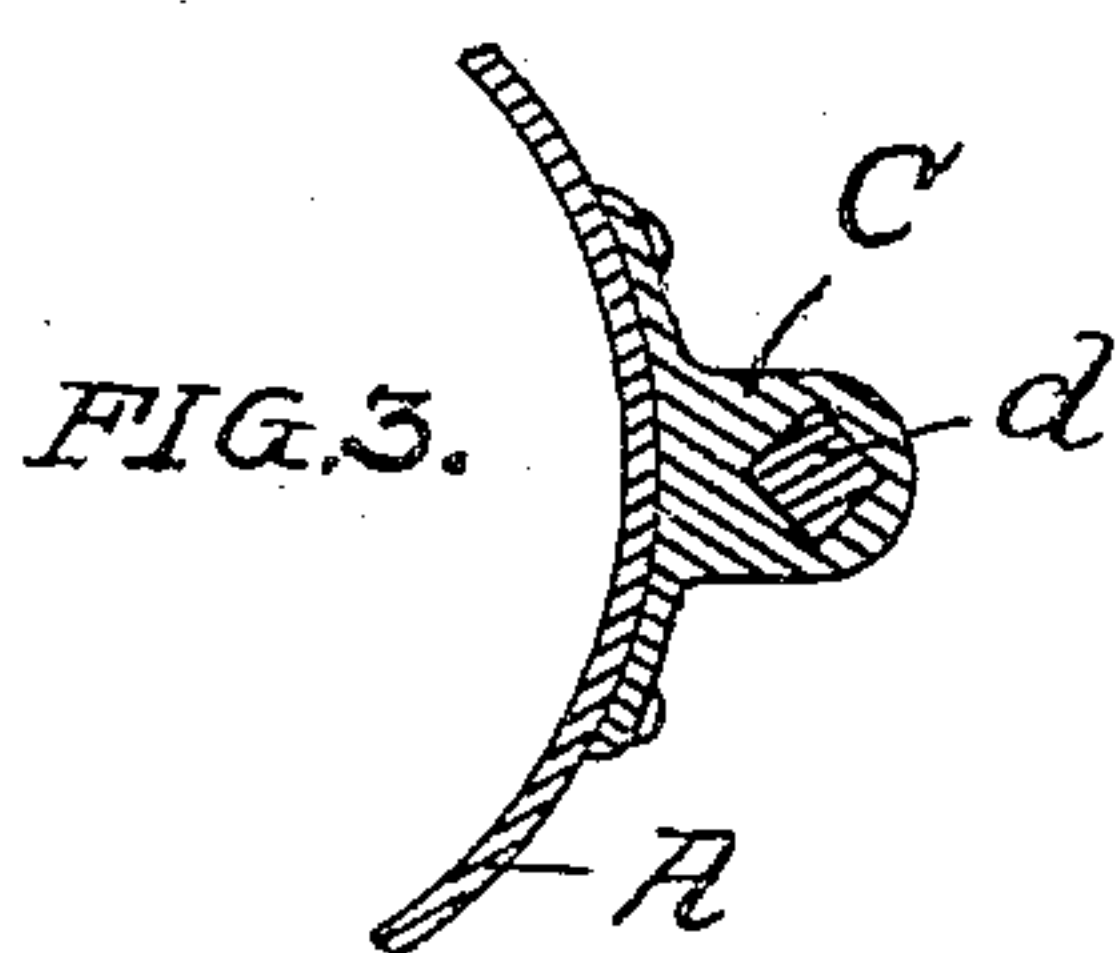
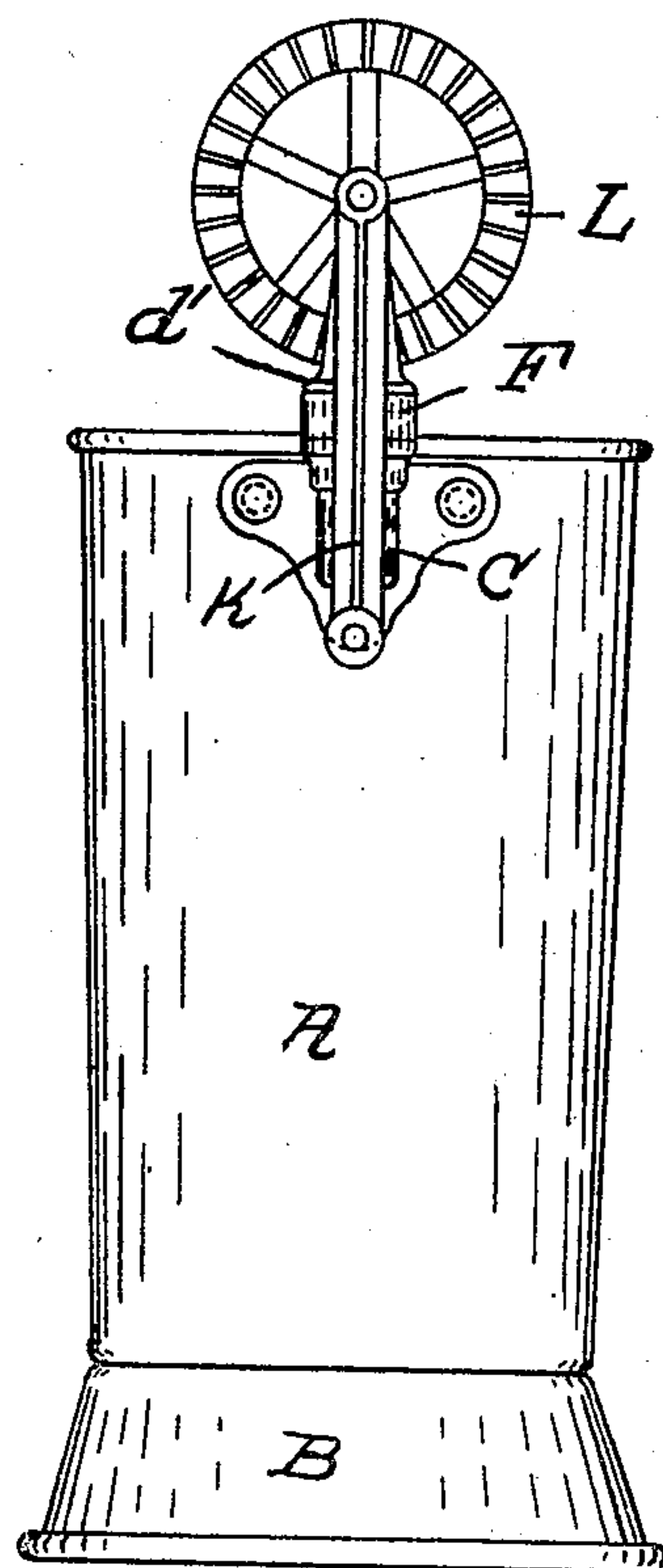
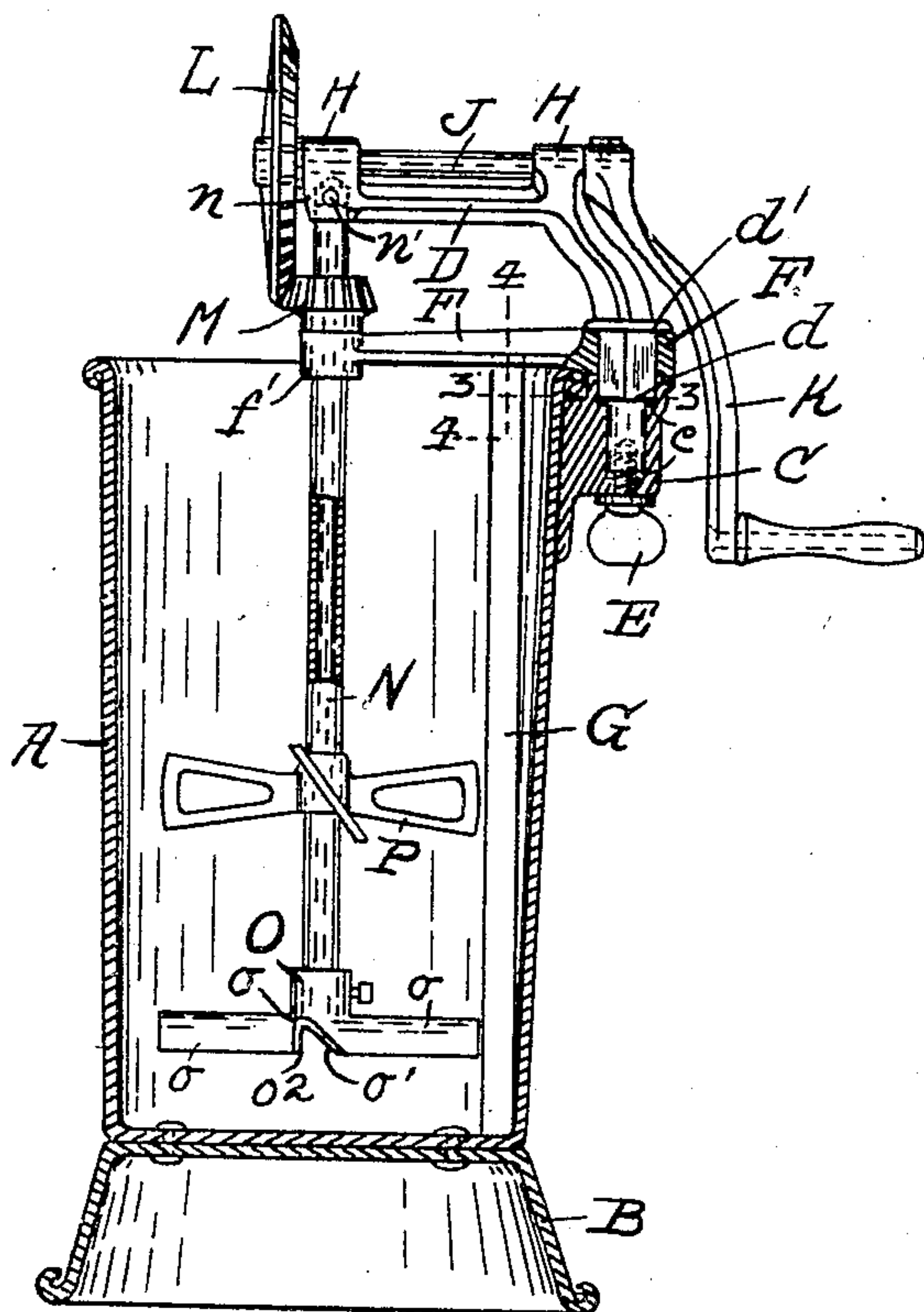
No. 835,352.

PATENTED NOV. 6, 1906.

A. FAY.

CENTRIFUGAL BUTTER SEPARATOR.

APPLICATION FILED AUG. 25, 1906.



WITNESSES:

Olive Sprau
Edwin H. Kemper.

INVENTOR.

Alpheus Fay
BY
Brayton G. Richards
ATTORNEY.

UNITED STATES PATENT OFFICE.

ALPHEUS FAY, OF LOUISVILLE, KENTUCKY.

CENTRIFUGAL BUTTER-SEPARATOR.

No. 835,352.

Specification of Letters Patent.

Patented Nov. 6, 1906.

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To all whom it may concern:

Be it known that I, ALPHEUS FAY, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a certain new and useful Centrifugal Butter-Separator, of which the following is a specification.

The object of my invention is to provide improved means for extracting butter from sweet milk or sweet cream by the introduction of air into the milk or cream during the process. The means employed for this purpose are of simple and economical construction, readily taken apart and assembled, and easily packed for shipment.

In the drawings, Figure 1 is a vertical section of a separator embodying my invention; Fig. 2, a side elevation of the same; Fig. 3, a section on line 3 3 of Fig. 1; Fig. 4, a section on line 4 4 of Fig. 1, and Fig. 5 a bottom plan view of the centrifugal separating and agitating air-pump.

The body A of the separator is preferably made of metal and enameled and is supported upon a similarly-made stand B, to which it is riveted. On the outside of the body at the top is secured a bracket C, having a vertical socket to receive the stem *d* of bracket D. The socket is made square or rectilinear in its upper portion and cylindrical in its lower portion to receive correspondingly-shaped portions of stem *d*. A small space *c* is left between the under sides of stem *d* and the bottom portions of the socket and a set-screw E mounted in the bottom of bracket C and threaded into the stem. A supplemental bracket F, having a square opening adapted to fit over the square upper portion of stem *d*, is secured in position by drawing the stem *d* into position, which causes shoulder on bracket D to imprison bracket F and securely lock it in place. In the bottom of bracket F, I provided a socket *f*, adapted to receive the upper end of damming-strip G, which is securely held in position between said socket and the bottom of the body A when the bracket is drawn into position by the action of set-screw E.

The bracket D is provided with suitable bearings H, in which is mounted a horizontal shaft J, carrying a suitable crank-handle K on its outer end and a beveled gear L on its inner end. The beveled gear L meshes with a beveled gear M, secured to a vertical hollow shaft N and resting upon bearing *f'* in bracket F. At its upper end shaft N fits

within a suitable socket *n* in bracket D, and an opening *n'* is provided to supply air to to the upper end of the shaft. At its bottom shaft N carries a combined air-pump and agitator O and above this a simple agitator P. The combined air-pump and agitator O consists of four channeled arms *o*, open at the bottom. The forward sides *o'* of arms *o* are inclined upwardly, and the rearward sides *o''* are substantially vertical, as shown.

In operation as shaft N is revolved the milk or cream in channeled arms *o* is thrown outwardly by centrifugal force, tending to create a vacuum at the center, which draws air downwardly through shaft N and projects it into the milk or cream, which is thoroughly agitated by the agitators O and P in conjunction with damming-strip G. The inclined forward sides of arms *o* tend to permit ready entry of the milk or cream into the channels, while the vertical rearward sides tend to retain it therein to bring it under the action of the centrifugal force to expel it.

It will be noted that all of the operative parts of the separator are securely locked in position by the action of a single set-screw and may be readily taken apart by loosening said screw.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of modification without departing from the spirit of my invention. I therefore do not wish to be limited to the exact construction shown in the drawings; but

What I claim as new, and desire to secure by Letters Patent, is—

1. In a butter-separator the combination of a separating-chamber; a bracket secured to the side of said chamber and provided with a rectilinear socket; a bracket carrying bearings for a horizontal shaft and provided with a rectilinear stem adapted to fit within the socket; a set-screw adapted to secure the stem in the socket; a beveled gear on the horizontal shaft engaging a beveled gear on a vertical shaft having a bearing in the horizontal shaft-bracket; a supplemental bracket engaging the rectilinear stem to be secured in position by the set-screw and provided with a bearing for the vertical shaft; agitators on the vertical shaft; and a crank-handle for operating the horizontal shaft, substantially as specified.

2. In a butter-separator, the combination of a separating-chamber; a bracket secured

to the side of said chamber and provided with a rectilinear socket; a bracket carrying bearings for a horizontal shaft and provided with a rectilinear stem adapted to fit within
 5 the socket; a set-screw adapted to secure the stem in the socket; a beveled gear on the horizontal shaft engaging a beveled gear on a vertical shaft having a bearing in the horizontal shaft-bracket; a supplemental bracket
 10 engaging the rectilinear stem to be secured in position by the set-screw and provided with a bearing for the vertical shaft; a socket in the bottom of the supplemental bracket; a damming-strip imprisoned between the
 15 socket and the bottom of the separating-chamber; agitators on the vertical shaft; and a crank-handle for operating the horizontal shaft, substantially as specified.

3. In a butter-separator, the combination
 20 of separating-chamber A; bracket C secured to the side thereof and having a rectilinear socket; bracket D supporting the horizontal shaft J and provided with a rectilinear stem d ; set-screw E for securing stem d in position;
 25 beveled gear L meshing with beveled gear M on shaft N; bearing n in bracket D having opening n' for the admission of air to the upper end of shaft N; supplemental bracket F having a rectilinear opening adapted to fit
 30 stem d ; bearing f' in bracket F for shaft N; a combined air-pump and agitator O provided with arms o inclined forward sides o' and vertical rearward sides o'' ; and a crank-handle for operating shaft J, substantially as
 35 specified.

4. In a butter-separator, the combination of separating-chamber A, bracket C secured to the side thereof, and having a rectilinear
 40 socket; bracket D supporting the horizontal shaft J and provided with a rectilinear stem d ; set-screw E for securing stem d in position;

beveled gear L meshing with beveled gear M on shaft N; bearing n in bracket D having opening n' for the admission of air to the upper end of shaft N, supplemental bracket
 45 F having a rectilinear opening adapted to fit stem d , bearing f' in bracket F for shaft N; a socket in the bottom of bracket F; a damming-strip G secured between the socket and the bottom of the separating-chamber; a
 50 combined air-pump and agitator O, provided with arms o , inclined forward sides o' and vertical rearward sides o'' ; and a crank-handle for operating shaft J, substantially as specified.

5. In a centrifugal butter-separator the combination of separating-chamber A; bracket C secured to the side thereof, and having a rectilinear socket; bracket D supporting the horizontal shaft J and provided
 60 with a rectilinear stem d ; set-screw E for securing stem d in position; beveled gear L meshing with beveled gear M on shaft N; bearing n in bracket D having opening N' for the admission of air to the upper end of
 65 shaft N, supplemental bracket F having a rectilinear opening adapted to fit stem d , bearing f' in bracket F for shaft N; a socket in the bottom of bracket F; a damming-strip G secured between the socket and the
 70 bottom of the separating-chamber; a combined air-pump and agitator O, provided with arms o , inclined forward sides o' and vertical rearward sides o'' ; body A made in one piece; stand B made in one piece and secured to
 75 gether by means of rivets, and a crank-handle for operating shaft J, substantially as specified.

ALPHEUS FAY.

Witnesses:

HATTIE MARIE FAY,
 R. A. CAMPBELL.