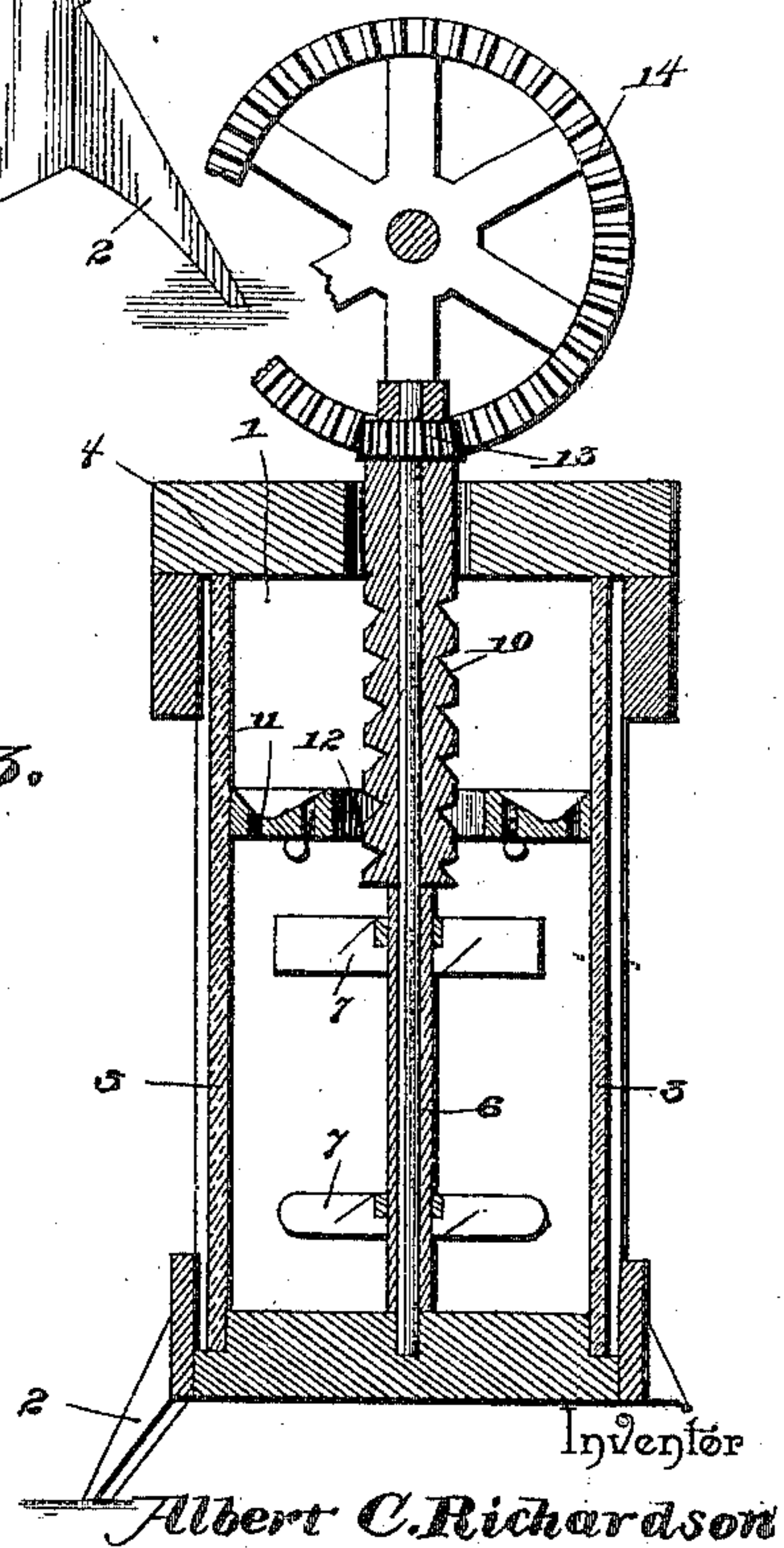
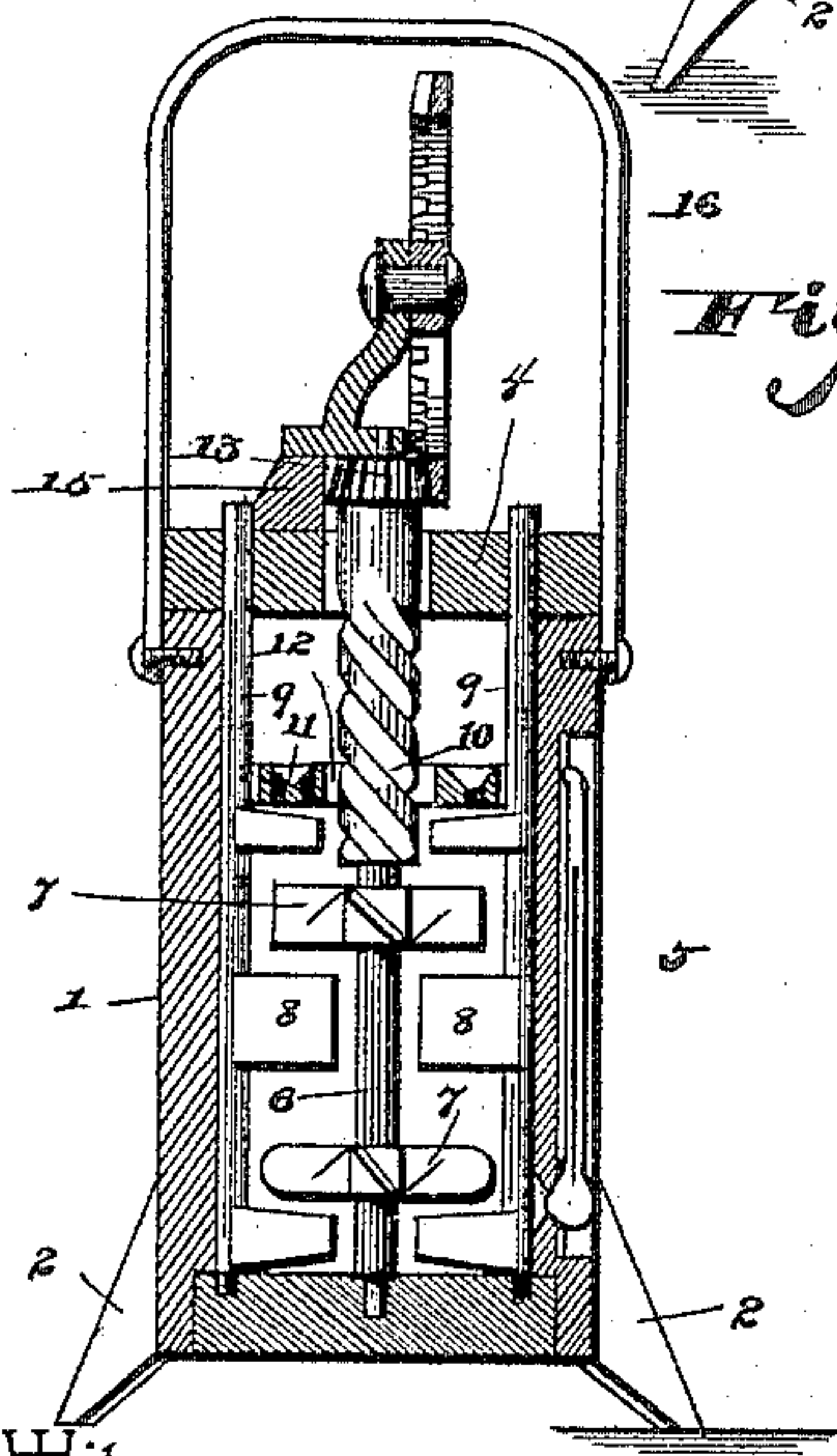
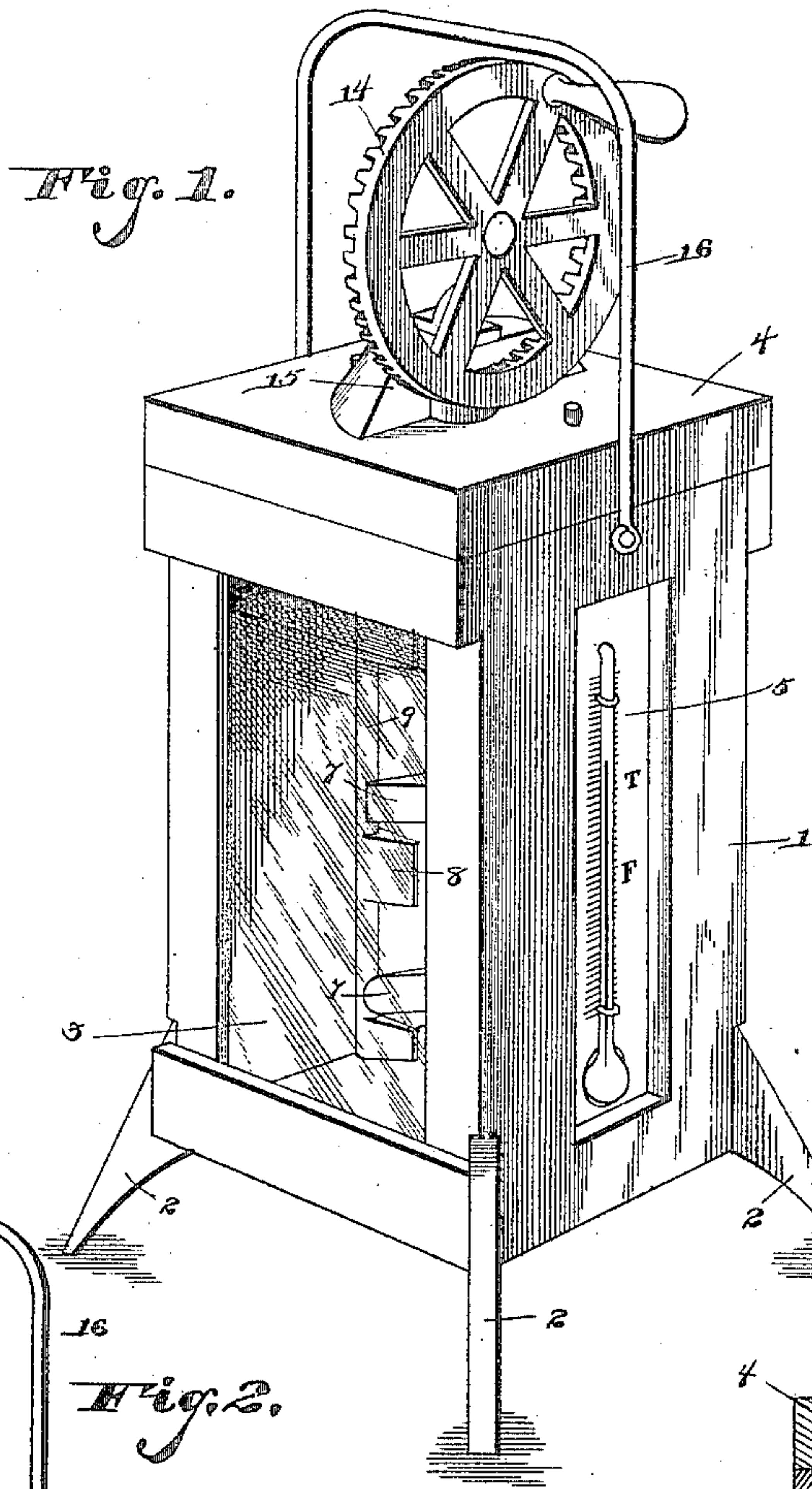


(No Model.)

A. C. RICHARDSON.  
CHURN.

No. 446,470.

Patented Feb. 17, 1891.



Witnesses

Samuel Ker.  
H. F. Riley

By His Attorneys,

Albert C. Richardson  
C. Snow & Co.



# UNITED STATES PATENT OFFICE.

ALBERT C. RICHARDSON, OF SOUTH FRANKFORT, ASSIGNOR OF ONE-HALF  
TO LOREN BARNES, OF BENZONIA, MICHIGAN.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 446,470, dated February 17, 1891.

Application filed June 30, 1890. Serial No. 357,279. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT C. RICHARDSON, a citizen of the United States, residing at South Frankfort, in the county of Benzie and State of Michigan, have invented a new and useful Churn, of which the following is a specification.

The invention relates to improvements in churns.

10 The object of the present invention is to provide a simple and inexpensive churn capable of readily converting the lacteal fluid into butter, and of delivering the same upon a suitable plate for convenient removal.

15 The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

20 In the drawings, Figure 1 is a perspective view of a churn embodying the invention. Fig. 2 is a central vertical sectional view. Fig. 3 is a similar view taken at right angle to Fig. 2.

25 Referring to the accompanying drawings, 1 designates the body of a churn, preferably rectangular in construction, and mounted upon diagonally-extending legs 2, and having two of its sides provided with panes of glass 3 to permit the interior of the churn to be inspected without necessitating the removal of the cover 4, and one of the other sides is provided with a thermometer 5, the bulb of which is arranged so as to be in contact with the lacteal fluid to indicate the temperature thereof, to enable the operator to readily ascertain the proper time and condition of the lacteal fluid for churning.

40 Arranged centrally in the body of the churn and having its lower end stepped in the bottom thereof is a vertical shaft 6, provided with dashers 7, having blades 8, and these rotary dashers 7 act in conjunction with stationary dasher-blades 8, mounted upon rods 9, arranged upon opposite sides of the churn-body, and having their lower ends seated in suitable sockets of the bottom, and their upper ends arranged in perforations of the cover 4, and the said stationary blades are arranged 50 in the intervals between the rotary blades

and above and below the latter, and it will readily be seen that this arrangement of dashers is capable of quickly converting lacteal fluid into butter by a most thorough and complete agitation of said fluid. The upper portion of the dasher shaft 6 is provided with a spiral groove 10, adapted to form a screw conveyer to carry the butter as it is formed upward and deposit the same upon a perforated plate 11, extending across the upper part of the churn and provided with a central opening 12 to receive the conveyer portion of the dasher-shaft; and the edges of said plates are provided with flanges and form a receptacle or dish of that portion of the plate between the outer edges or flanges and the central opening 12. The upper end of shaft is provided with a pinion 13, that meshes with a cog-wheel 14, mounted upon the top of the cover and provided with a suitable handle for operating the churn. The upper end of the churn finds bearing in a central opening of the cover, and the pinion is arranged above the same and is partially housed in a casing 15.

The body of the churn is provided with a suitable bail 16, and the cover is secured to the body in any desirable manner, preferably by means which will enable it to be quickly removed when desired.

From the foregoing description and the accompanying drawings the construction, operation, and advantages of the invention will be readily understood.

It will be readily seen that the rods 9 may be turned so as to present the blades 8 at different angles with relation to the rotary dashers 7 of the central shaft.

What I claim is—

1. In a churn, the combination of the body, the dasher-shaft having its lower portion provided with a series of dasher-blades, means for operating the dasher-shaft and the adjustable dashers, comprising the rods oppositely disposed and provided with blades arranged in the intervals formed by the blades of the dasher-shaft, and having their lower ends journaled in the bottom of the body and having their upper ends journaled in the cover and projecting above the same and

adapted to be turned to adjust the blades with relation to the blades of the dasher, substantially as described.

2. In a churn, the combination of the body,  
5 the dasher-shaft having its lower portion provided with a series of dasher-blades and its upper portion provided with a spiral groove, means for operating the dasher-shaft, the adjustable dashers comprising the rods opposi-  
10 tely disposed and provided with blades arranged in the intervals formed by the blades of the dasher-shaft, said rods having their lower ends journaled in the bottom of the

churn and having their upper ends journaled in the cover and projecting above the same 15 and adapted to be turned to adjust the blades, and the plate supported above the uppermost blades of the said rods and provided with perforations, substantially as described.

In testimony that I claim the foregoing as 20 my own I have hereto affixed my signature in presence of two witnesses.

ALBERT C. RICHARDSON.

Witnesses:

LOT. NEVINS,

ETTA S. NEVINS.