

(No Model.)

2 Sheets—Sheet 1.

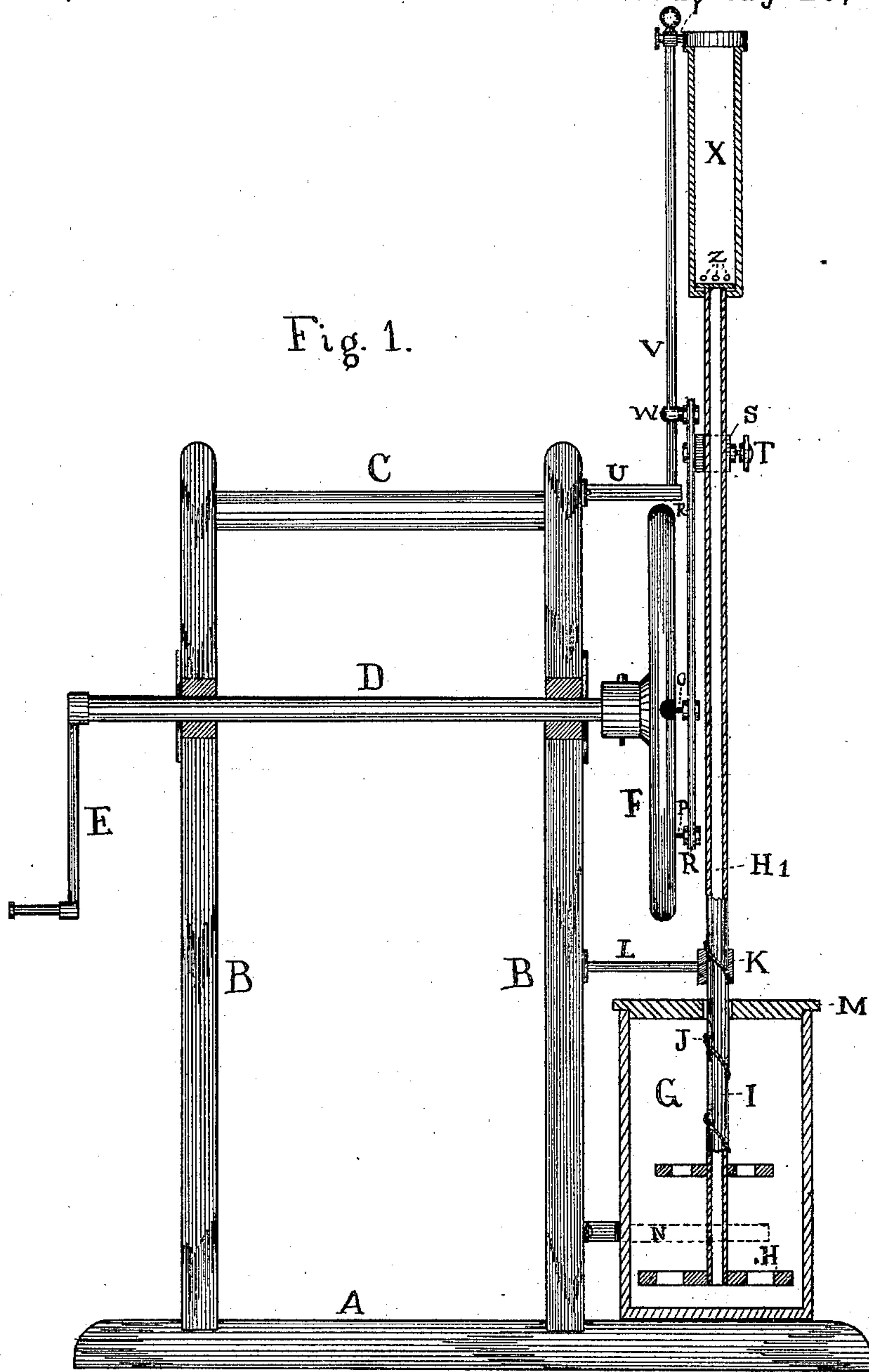
C. J. LE ROY.

CHURN.

No. 298,760.

Patented May 20, 1884.

Fig. 1.



WITNESSES:

E. F. Burton
W. A. Rowland

INVENTOR

Chas. J. Le Roy

BY

Burton & Parker
his ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

C. J. LE ROY.

CHURN.

No. 298,760.

Patented May 20, 1884.

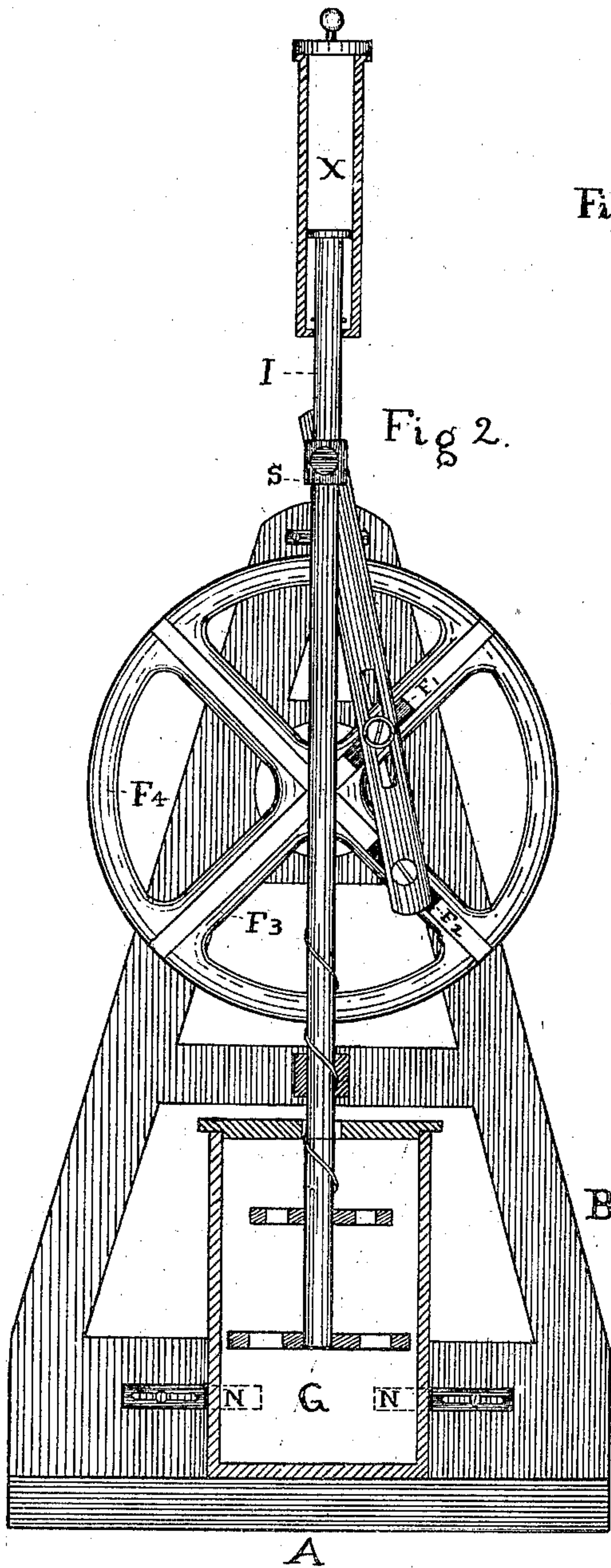


Fig 5.

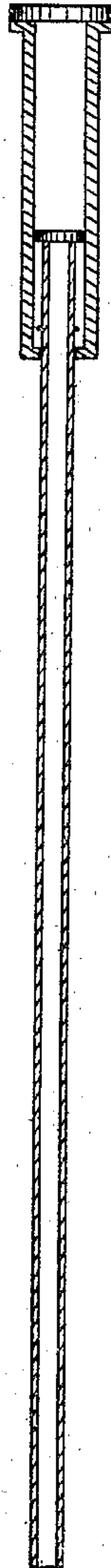


Fig. 3.

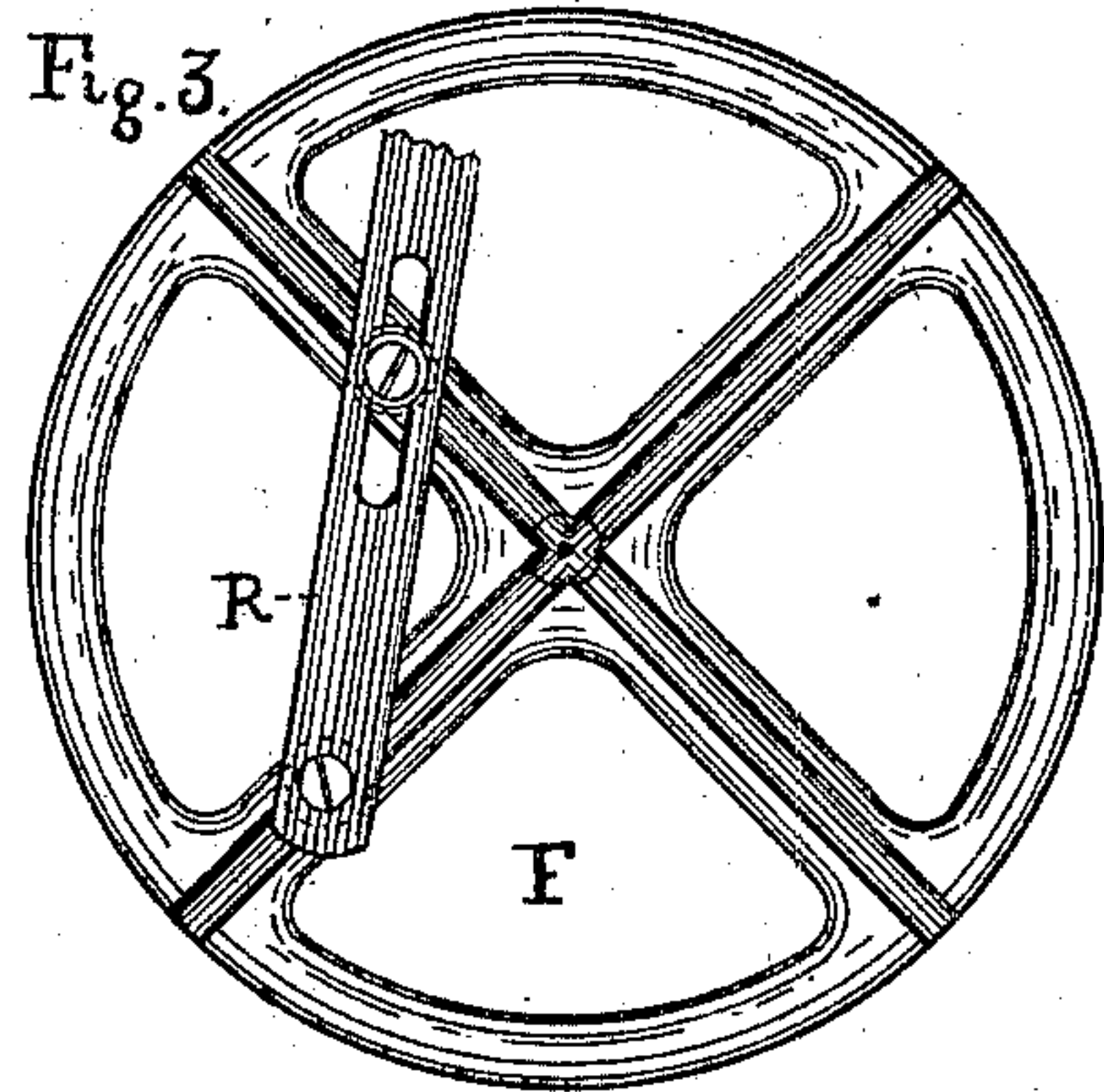


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES J. LE ROY, OF CHICAGO, ILL., ASSIGNOR OF TWO-THIRDS TO GEORGE W. WHITSON AND HOWARD WAGNER, BOTH OF ST. LOUIS, MO.

CHURN.

SPECIFICATION forming part of Letters Patent No. 298,760, dated May 20, 1884.

Application filed October 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. LE ROY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Churns, of which the following is a specification.

My invention relates to improvements in churns and the devices for operating the same; and it has for its objects to secure a rapid and complex motion of the dasher by a simple and inexpensive device, and to supply the fluid in the churn with a constant flow of air and oxygen. I accomplish these objects by the mechanism illustrated in the accompanying drawings, which are made a part of this application, and in which like letters represent like parts in all the figures.

Figure 1 represents a side view of the device; Fig. 2, an end view; Fig. 3, a detail view of the trammel-wheel; Fig. 4, a detail view of the spiral attachment; Fig. 5, a detail view of the oxygen and air pump.

A is the base; B, the standards secured thereon in grooves; C, a cross-piece; D, a crank-shaft supported on the standards; E, a crank for operating the same; F, a trammel-wheel on the end of the shaft. G is a churn-cylinder; H, a dasher therein; I, the dasher-handle, having the tubular bore H' throughout its length. J is a spiral cut on or secured to the handle, as shown. K is an internally-spiraled collar inclosing the handle and supported on the arm L. M is the churn-lid; N, arms securing the cylinder in position. O, P are short pins connecting the pitman R with the sliding blocks or rolling balls in the grooves or spokes of the trammel-wheel; S, a block swiveled to the handle I by means of a groove thereon and the set-screw T, and secured to the pitman R. U is an arm projecting from the top of one standard; V, a vertical post thereon; W, a block secured to the pitman R and sliding on the post V. Y is an arm at the top of the post V. X is an inverted cylinder attached thereto, and having at its lower end the perforations Z, and of such size and position as to receive the end of the handle as it rises. F' is one trammel block or

ball, and F² the other. F³ is a spoke, and F⁴ the periphery, of the trammel-wheel. The arms N are adjustably secured to the standard so as to accommodate themselves to churns of various sizes. The trammel-wheel may be made with tubular spokes, in which case the grooves are made therein for the passage of the pins P and O. These pins may be swiveled to the pitman R, or to the blocks or balls F' and F². I consider a trammel-wheel with tubular spokes the best form of device. In this case the pitman-pins are secured to balls which roll freely in the tubular spokes, thus being practically frictionless and noiseless, and dispensing with lubricating-oil.

The operation of my device is as follows: In the position shown in Fig. 1 the dasher is at the bottom of the cylinder. If now the crank E is turned, the dasher will rise, making two complete revolutions for one turn of the crank, by reason of the action of the trammel-wheel and pitman R on the handle. As the dasher reciprocates it is rapidly revolved in alternately-reversed directions by the action of the internally-spiraled collar K on the spiral J. Thus it will be seen that an exceedingly complex and rapid motion of the dasher is secured by means of a very simple device. As the handle rises in its reciprocations it passes into the cylinder X, which is full of air. As soon as it has passed the perforations Z the air in the cylinder is forced down through the bore H' and discharged into the liquid at the bottom of the cylinder G, thereby supplying the liquid therein with air and oxygen.

The details of my device might be greatly altered without departing from the spirit of my invention.

I do not wish to be understood as claiming anything contained in the patent to Letort, No. 104,968, July 5, 1870; but

What I do claim is—

1. The combination of a churn-cylinder, a dasher-handle having an internal longitudinal bore, and the suitably-supported cylinder X, having perforations Z Z, for the purpose set forth.

2. The combination of a churn-cylinder, a dasher-handle having an internal longitudinal

bore, an oxygen-cylinder suitably supported to receive the rising end of the handle, and a trammel-wheel suitably supported and connected to the dasher-handle so as to operate
5 the churn.

3. The combination of a churn-cylinder, a dasher-handle having an internal longitudinal bore and a spiral on its outer surface, an oxygen-cylinder placed so as to receive the end of
10 the dasher-handle as it rises, an internally-spiraled collar inclosing a dasher-handle and suitably supported, and a trammel-wheel connected to the dasher-handle, as described.

4. The combination of the base A, the supports B B, secured thereto, the crank-shaft D, 15 supported on the standards, the trammel-wheel F on the end of the shaft, the churn G, dasher H, having bore H' and spiral J, the cylinder X, collar K, and pitman R, connecting the trammel-wheel with the dasher-handle.

CHARLES J. LE ROY.

Witnesses:

FRANCES W. PARKER,
CHAS. S. BURTON.