(Model.)

T. C. COOPER.

Churn

No. 233,985. Patented Nov. 2, 1880.

Fig. 1.

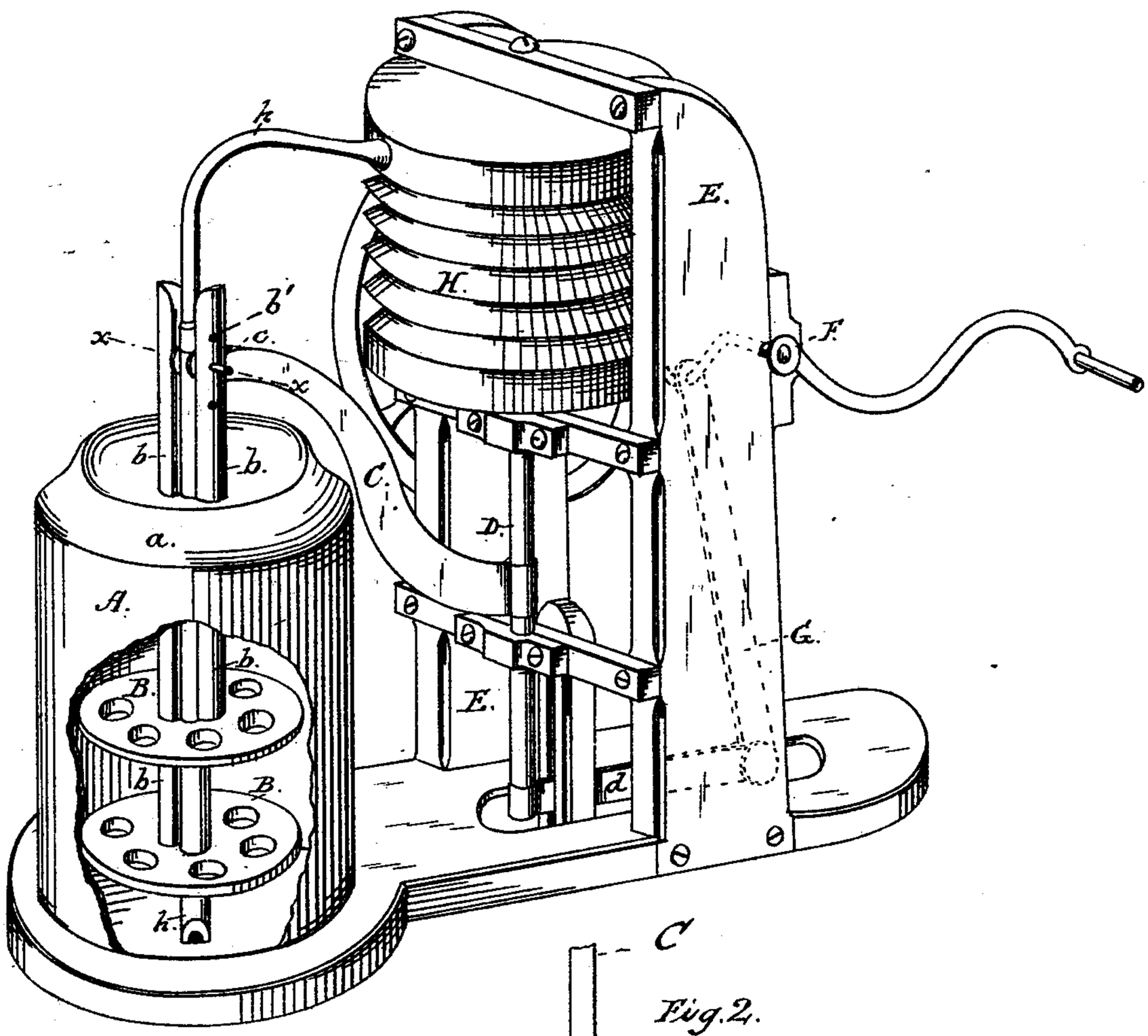
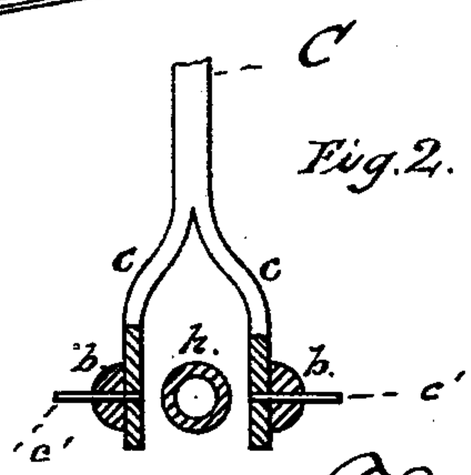


Fig. 2.



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UNITED STATES PATENT OFFICE.

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CHURN.

SPECIFICATION forming part of Letters Patent No. 233,985, dated November 2, 1880.

Application filed September 8, 1880. (Model.)

To all whom it may concern:

Be it known that I, THOMAS C. COOPER, a citizen of the United States, residing at Indiana, in the county of Indiana and State of Pennsylvania, 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 shows the device in perspective. Fig. 2 is a detail to show the relation of the air-inlet pipe to the dash-rods.

This invention relates to that class of churns known as "aerating;" and the novelties and improvements consist in the manner and means by which the air is introduced and a free circulation thereof throughout the cream insured every time the dashers are raised; and in the combination, with this feature, of the adjustable dashers, whereby an efficient operation can be produced in any state of the atmosphere and under all conditions of the cream; and in the peculiar combination, with the churn-body and air-induct and dashers, of the bellows; and, finally, in the combination, with the several parts aforementioned, of the operative mechanism, whereby a compact, strong, and very serviceable churn is produced, all as will now be fully set out and explained.

In the drawings, A denotes the body or containing-chamber of the churn, and B B perforated dashers, one or both adjustable on their rods *b* in or to the forked ends *c* of the curved arm C by means of pins C′, which fit into one of the holes *b′* in said rod and into a suitable hole in *c*, or in any like or convenient way, which arm is at the other end fixed, by a set-screw or in any desired way, to or on the vertical shaft D, which is sustained by and has motion in frame E. These rods *b* are moved centrally up and down through holes in the top of the cover *a* by the operation of crank F, to which the upper end of pitman G is jointed, the lower end of said pitman being suitably jointed to the arm *d*, which extends horizontally or otherwise from the foot, preferably, of the shaft D, to which shaft it is rigidly attached or secured by a set-screw or otherwise. The top of the bellows H is attached to the frame E and its lower end to the shaft D, which is placed centrally and vertically under it. From the top of the bellows the pipe *h* passes down between the dash-rods *b b* and through the dashers B to the bottom of the churn-body. Thus, when the crank operates the dashers, at the same time it is forcing air at the proper and regulated moment into the bottom of the cream, whence it is forced upward through the body of the cream and caused to thoroughly intermingle with it during the process of churning. The bellows H being placed above or over the operative mechanism, there is but little danger of interference between the several parts when the device is worked, while this arrangement insures the most efficient operation of the device, and permits the utmost compactness as well as cheapness in the structure.

This structure is at once simple and cheap and very easily kept clean. In operation it is found to be a very rapid as well as an effective butter-maker, and by it not only is the work of churning easily and speedily accomplished, but the best results from a given amount of cream are obtained.

Heretofore in churns of the general description now referred to in the foregoing there have been many difficulties in adapting the air-pipe properly in relation to the dashers, the churn, and the operative mechanism, and hence such appliances or combination of parts have been so cumbersome and so poorly suited to the ends in view as to render them either impracticable or too expensive for any general adoption. In the present instance all these parts have been combined in an entirely novel way, whereby the device as a whole is rendered very compact. The operative mechanism is very strong, simple, and cheap. The air-induct cannot be disturbed by the movement of the parts connected with the dashers. The dashers can be properly adjusted up or down in relation to the air-induct to secure the best results in any temperature or with any kind of milk.

Having thus described my invention, what I consider new, and desire to secure by Letters Patent, is—

1. In an aerating-churn, and in combination with the air-induct, as described, the adjustable dashers B B, dash-rods *b*, curved arm C, having arms *c*, to which said rods are attached, shaft D, arm *d*, pitman G, and crank F, substantially as described.

2. In an aerating-churn, a vertical shaft, D, operated as described, and the bellows H, placed directly over it and moved by it, and having pipe *h*, combined with arm C, bifurcated at *c*, and carrying dasher-rods *b*, with their dashers, and churn A, substantially as described.

3. In combination with a suitable frame, E, in which is mounted the operative mechanism, substantially as set forth, and the bellows H, attached to and operated by rod or shaft D, the air-pipe *h*, arm C, churn A, and perforated dashers B, adjustable by stems or rods *b*, all substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS C. COOPER.

Witnesses:
J. A. EWING,
JOHN MCGAUGHEY.