MYERS, SEARLES & SPENCER.

Churn.

No. 35,620. Patented June 17, 1862.

Fig. 1.

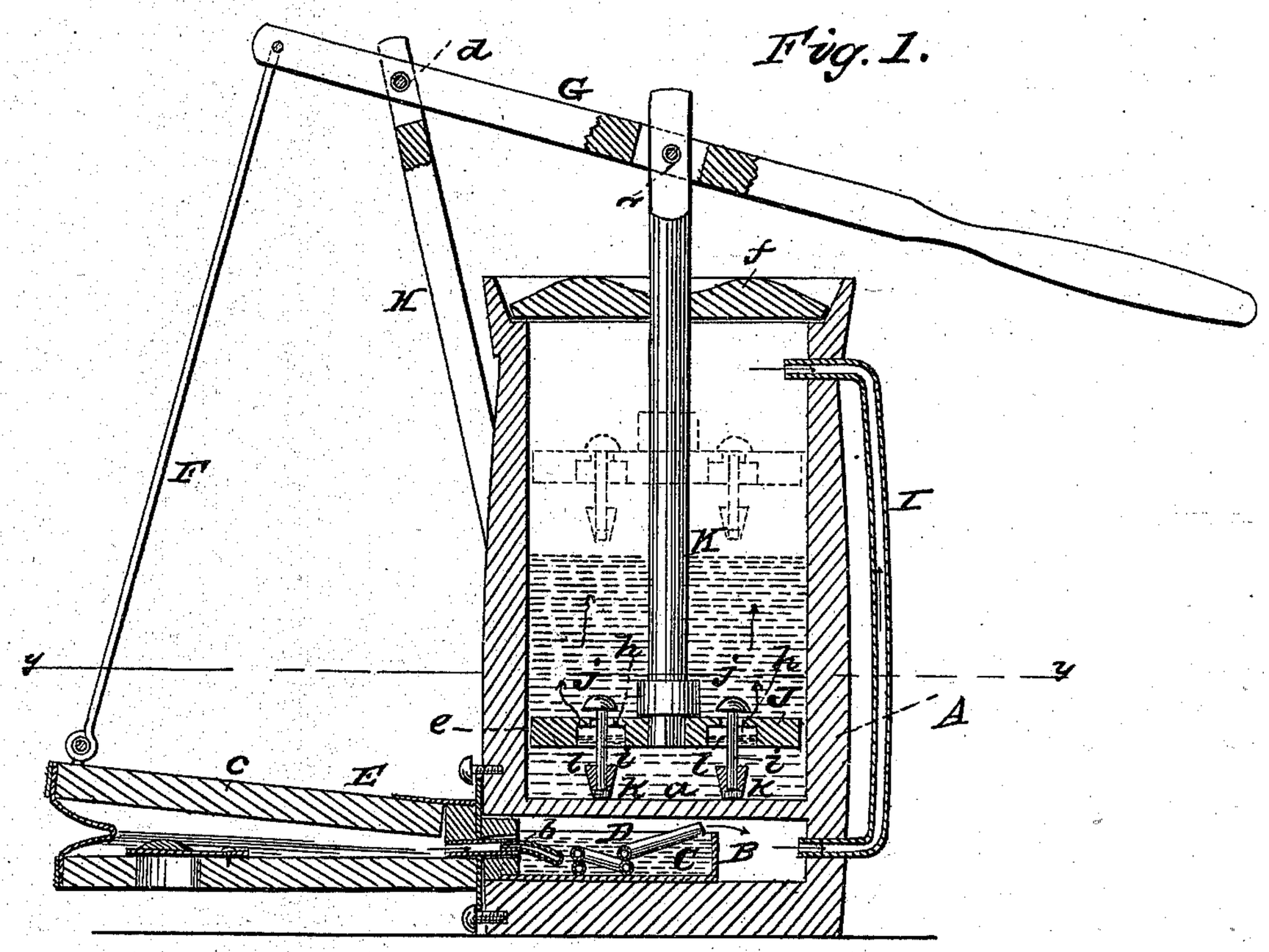
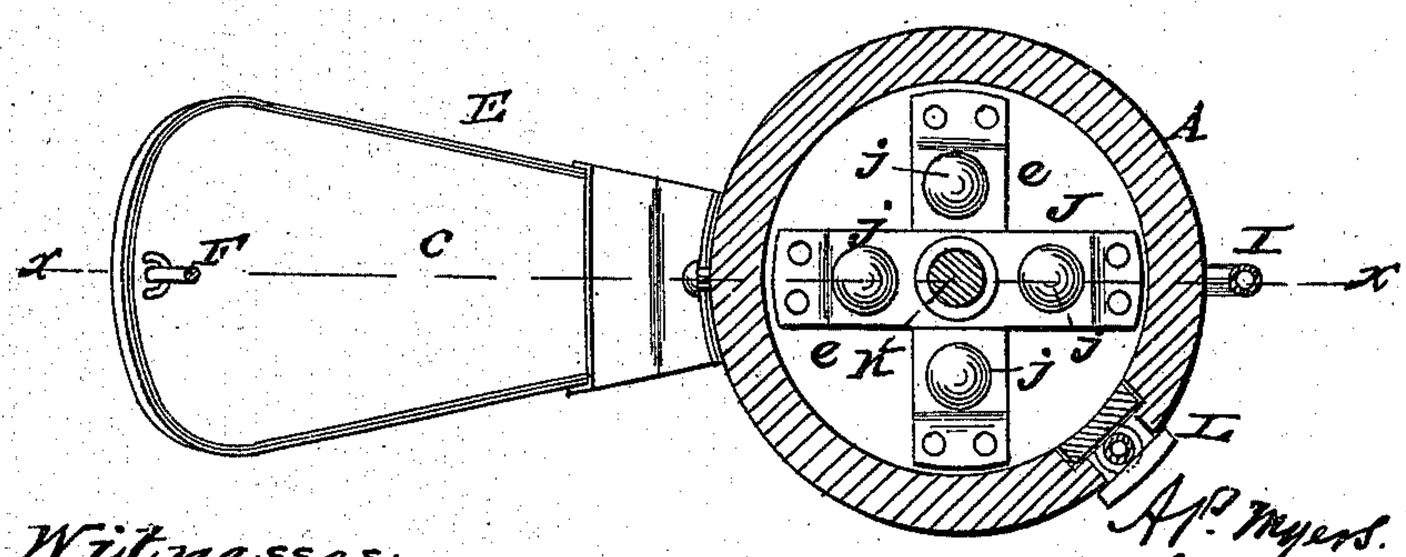


Fig. 2.



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UNITED STATES PATENT OFFICE.

A. P. MYERS, ISAAC SEARLES, AND GEORGE W. SPENCER, OF PRATTSVILLE, NEW YORK.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **35,620**, dated June 17, 1862.

To all whom it may concern:

Be it known that we, A. P. MYERS, ISAAC SEARLES, and G. W. SPENCER, all of Prattsville, in the county of Greene and State of New York, have invented a new and Improved Churn; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical central section of our invention, taken in the line *x x*, Fig. 1; Fig. 2, a horizontal section of the same, taken in the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

This invention relates to an improved churn of that class in which either hot or cold air is introduced into the cream during the process of churning.

The object of the invention is to obtain a simple and cheap means for the intended purpose which may be applied to the up-and-down plunger-churn—the kind most generally considered as being preferable to all others.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A represents a churn, which may be of cylindrical or slightly-conical form, similar to those which are provided with the ordinary reciprocating dasher. This churn is provided near its bottom with a horizontal partition, *a*, which forms a small compartment, B, to receive a drawer, C, in which a coiled pipe, D, is placed, said pipe communicating at one end with the nozzle *b* of a bellows, E, which is attached to the churn A in any suitable way that will admit of ready removal when necessary.

The bellows E may be of the ordinary single kind, its upper movable or hinged top piece, *c*, being connected near its outer end by a rod, F, with one end of a lever, G, the fulcrum-pin *d* of which passes through the upper end of a support, H, attached to the churn. (See Fig. 1.)

I is a tube, the lower end of which communicates with the compartment B, the upper end communicating with the interior of the churn A above the surface of the cream therein. The disengaged end of the coiled pipe D projects a trifle above the drawer C.

J is the plunger of the churn, which is composed of two bars, *e e*, crossing each other at right angles and connected at their point of intersection with the lower end of the dasher-rod K, the latter passing, as usual, through the center of the lid *f* of the churn. The upper end of the rod K is connected by a pivot, *g*, with the lever G, as shown in Fig. 1.

The two bars *e e* of the dasher are perforated with holes *h*, through which the rods *i* of valves *j* pass, the valves, when down, closing the orifices of the holes *h*, which are considerably larger in diameter than the rods *i*. The lower end of each rod *i* is provided with a weight, *k*, and these weights, when free to act, are competent to keep the valves *j* closed or down over the holes *h*.

In the under side of each bar *e* of the dasher there are made openings or cavities *l*, which may be of circular form. These openings or cavities are concentric with the holes *h*, but are much larger in diameter. The holes *h* communicate with the openings or cavities *l*, as clearly shown in Fig. 1.

The parts above described compose the whole of the invention, and the operation is as follows: The churn A is supplid with a requisite quantity of cream, and in case warm air is to be incorporated with the cream the drawer C is filled with warm water. The lever G is then operated, and the dasher J moved up and down, and the bellows E worked simultaneously. As the bellows E operates air is forced through the coiled pipe D into chamber B, and the air, in passing through the coiled pipe D, is warmed by the water in the drawer C. This warm air is forced under the operation of the bellows up the pipe I into the upper part of the churn A above the cream. Each time the dasher J ascends above the surface of the cream the openings or cavities *l* fill, of course, with warm air, and said air is carried down through the cream as the dasher descends, and when the weights *k* come in contact with the bottom *a* the dasher is allowed to descend a trifle farther down, so as to open the valves *j*, (see Fig. 1,) and the warm air escapes from the openings *l* through the holes *h* and passes up through the cream, as indi-

cated by the arrows 1. Thus it will be seen that the warm air will be thoroughly incorporated with the cream. In case it is desired to incorporate cold air with the cream, the drawer C is supplied with cold water. The churn A may have a thermometer, L, inserted in it in order to indicate the temperature of the cream.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the air-cells *l* and valves *j* with the dasher J and bottom *a*, as herein shown and described.

2. The arrangement of the movable water-receptacle C, air-pipe D, bellows E, and pipe I with each other and with the chamber B and churn A, in the manner herein shown and described.

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