J. W. WILSON

Churn.

No. 214,268. Patented April 15, 1879

Fig. 1

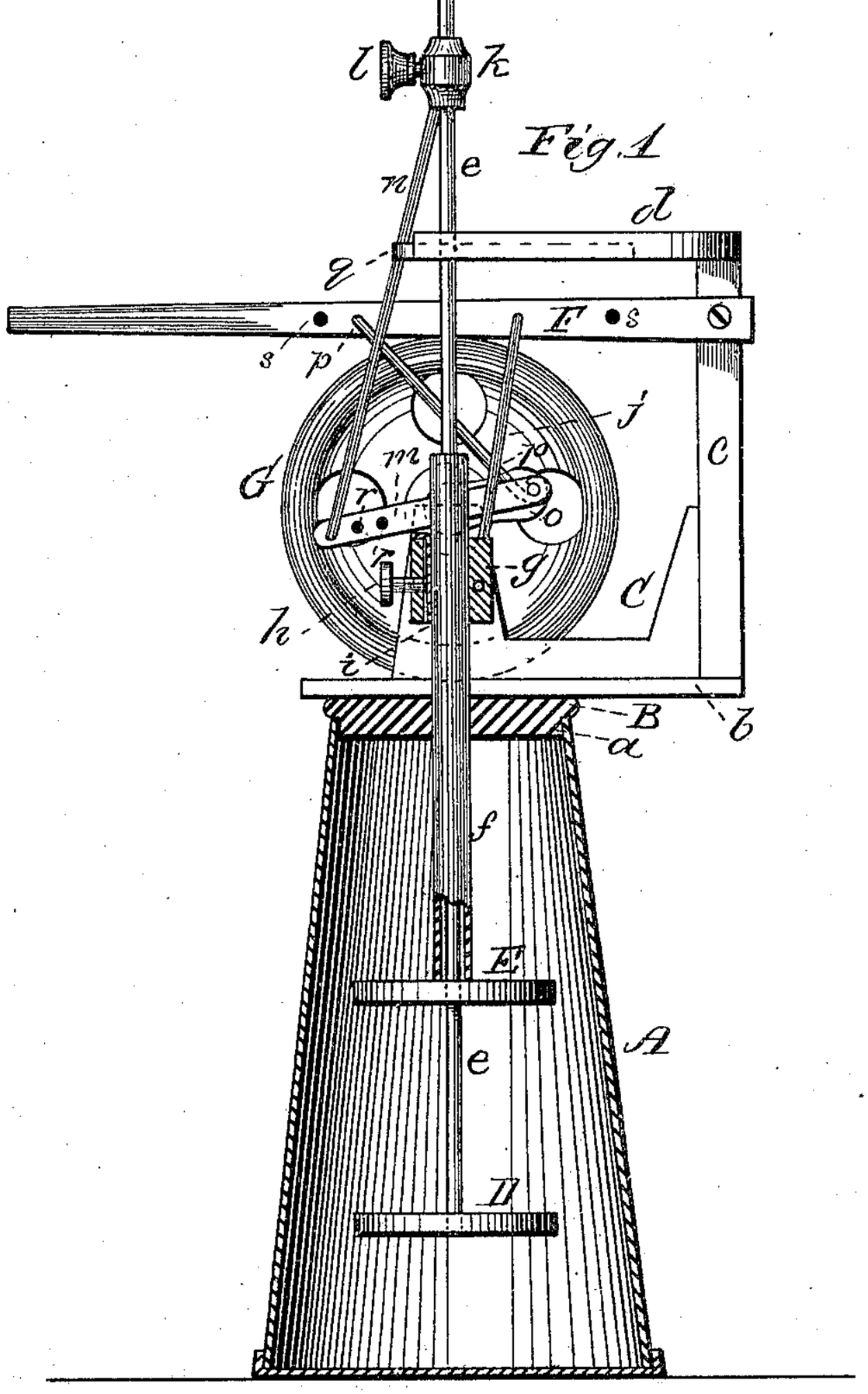

Fig. 2.

WITNESSES

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JACOB W. WILSON, OF SUMMERFORD, OHIO.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **214,268**, dated April 15, 1879; application filed January 27, 1879.

To all whom it may concern:

Be it known that I, JACOB W. WILSON, of Summerford, in the county of Madison and State of Ohio, have invented a new and valuable Improvement in Churns; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side elevation of my invention, partly in section. Fig. 2 is a view in detail of a portion of the operating mechanism.

This invention has relation to that class of churns in which are employed two or more dashers having a vertical movement up and down within the churn-cylinder by an operating mechanism connected to the dasher-staffs, to which the dasher-heads are secured.

The purpose or object of the present invention is to provide means whereby the churn-dashers are caused to move in a direction opposite to each other, and to insure their perfect operation at all times in performing their work of churning, whereby the butter is obtained in a very short time with a comparatively small amount of labor.

It is a further object of the invention to simplify the construction of the operating parts and greatly lessen their cost of manufacture, while at the same time they are not liable to become inoperative by getting out of order.

The construction and arrangement of the several parts of the churn will be hereinafter more fully described, and subsequently pointed out in the claims.

In the accompanying drawings, A represents the churn-cylinder, of any suitable form, and of metal or wood, as desired. The cylinder A is provided with a lid or cover, B, formed with a flange, *a*, so that it will fit tightly within the top of the cylinder, and any suitable device may be employed for securely fastening said cover in place, and admitting, when desired, of its ready removal therefrom.

The mechanism employed for operating the churn-dashers is connected to a suitable frame, C, said frame being rigidly secured to the lid or cover by bolts or other convenient means. This frame consists of a flat base, *b*, and vertical standard *c*, to which is connected a horizontal arm, *d*.

The dasher-heads D E may be of cylindrical or other form, and provided with the usual openings or perforations. The lower dasher-head, D, is secured to a staff, *e*, which is solid, and passes up through a hollow staff, *f*, which carries the upper dasher-head, E. Both the staffs *e f* extend up through the lid or cover B, the hollow staff *f* being securely held at its upper end within a block, *g*, by set-screw *h*, passing through the same and forcing against the staff a spring-plate, *i*. The means of attachment prevents the block *g* from slipping, and allows the ready removal of the staff *f* when required. Detachably connected to the block *g*, and to an operating-lever, F, pivoted to the standard *e*, is a rod, *j*. By the operation of the lever through the connecting-rod *j* the dasher E is caused to vertically reciprocate within the churn-cylinder A.

The staff *e*, which carries the dasher-head D, has secured to its upper end a vertically-adjustable block, *k*, secured in place thereon by a set-screw, *l*. The block *k* is connected to a strap, *m*, by a rod, *n*, said rod being so connected thereto as to be detached at pleasure. The strap *m* is connected at its opposite end to a crank, *o*, which carries a fly-wheel, G, having its bearing in the frame C. Between the crank *o* and strap *m* is connected a rod, *p*, the upper end being connected to the lever F near its handle. The staff *e* is guided in its vertical movement by the horizontal arm *d*, said arm having a semicircular recess for the rod, which is retained therein by a spring, *q*.

The manner of constructing the several parts of the churn renders them easily taken apart, and the dasher-heads may be readily removed by loosening the set-screws *h l* and disconnecting the rods *j n*, the lid or cover B being first removed from the churn-cylinder A, or afterward, as desired.

When churning is required to be done, the cylinder A is first filled with cream within a few inches of the top, after which the dashers are introduced, the cover or lid being fastened in position over the top of the cylinder with its frame C and operating mechanism. The

rod *n*, which connects the dasher-staff *e* to the crank *o*, is now secured to the strap *m* by placing the lower end, which is hooked or bent, into the end hole of the strap, after which the rod *j* is connected to the block *g* and to the lever F, near the center of said lever, as illustrated in Fig. 1 of the drawings, for operating the dasher-head E. The hollow staff *f* must be adjusted within the head *g*, also the staff *e* within the head *k*, so that the dasher-heads will be made to operate through the entire column of cream, meeting each other near the center of the cylinder A, and retreating in opposite directions.

When a smaller amount of cream is required to be churned, it becomes necessary that the dashers should have a shorter motion, in order that each dasher may be caused to operate in the cream without the upper one being raised above the surface thereof while performing a part of its motion. This is accomplished by putting the lower end of the rod *n* in the middle hole of the strap *m*, there being three or more holes, *r*, to admit of said adjustment. The rod *j* is also adjusted by connecting it with the middle hole in the lever F, after which the hollow dasher-staff must be moved down until its top comes flush, or nearly so, with the upper surface of the block *g*, at the same time moving the staff *e* down through the metal thimble or block *k* the required distance, when the motion of the dashers or the length of their stroke will be regulated. Should it be found necessary, figures or other suitable marks may be made on the staffs *e f* any desired distance apart, or a distance equal to the distance between the holes *r* in the strap *m*, to form a gage to enable the operator to adjust the staffs with accuracy.

It sometimes is found advantageous to churn a very small quantity of cream, but a few inches in depth. In this case it becomes necessary to have the dashers so adjusted that their length of motion will be still shorter, and each, as before, may be made to operate in the cream, which is accomplished by changing the position of the upper end of the rod upon the lever, and also lowering the dasher-staff *e* through the thimble or block *k* to the proper distance, also the staff *f*, so that when the dashers come together they will not touch each other.

When the churning is completed and it is required to gather the butter, the connecting-rod is adjusted by placing the upper end thereof in the hole *s* nearest the upright *c*, while the other dasher operates as before. A few motions of the lever after this adjustment is made successfully gathers the butter.

It will be seen that a churn constructed according to my invention requires but little power to operate it, and every provision is made for the ready disconnecting of all the parts, should circumstances require it, as well as disconnecting the entire frame from the cover or lid of the churn-cylinder, by simply removing the screw-bolts.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the dashers D E and dasher-staffs *e f*, arranged to operate as described, of the rods *j n p*, strap *m*, crank-arm *o*, and lever F, as a means for operating said dashers, substantially as and for the purpose described.

2. The dashers D E and dasher-staffs *e f*, adjustable blocks *g k*, fly-wheel G, and crank-arm *o*, in combination with the frame C, lever F, rods *j n p*, and strap *m*, all constructed to operate substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JACOB W. WILSON.

Witnesses:
J. M. CUSHMAN,
H. P. MARKLE.