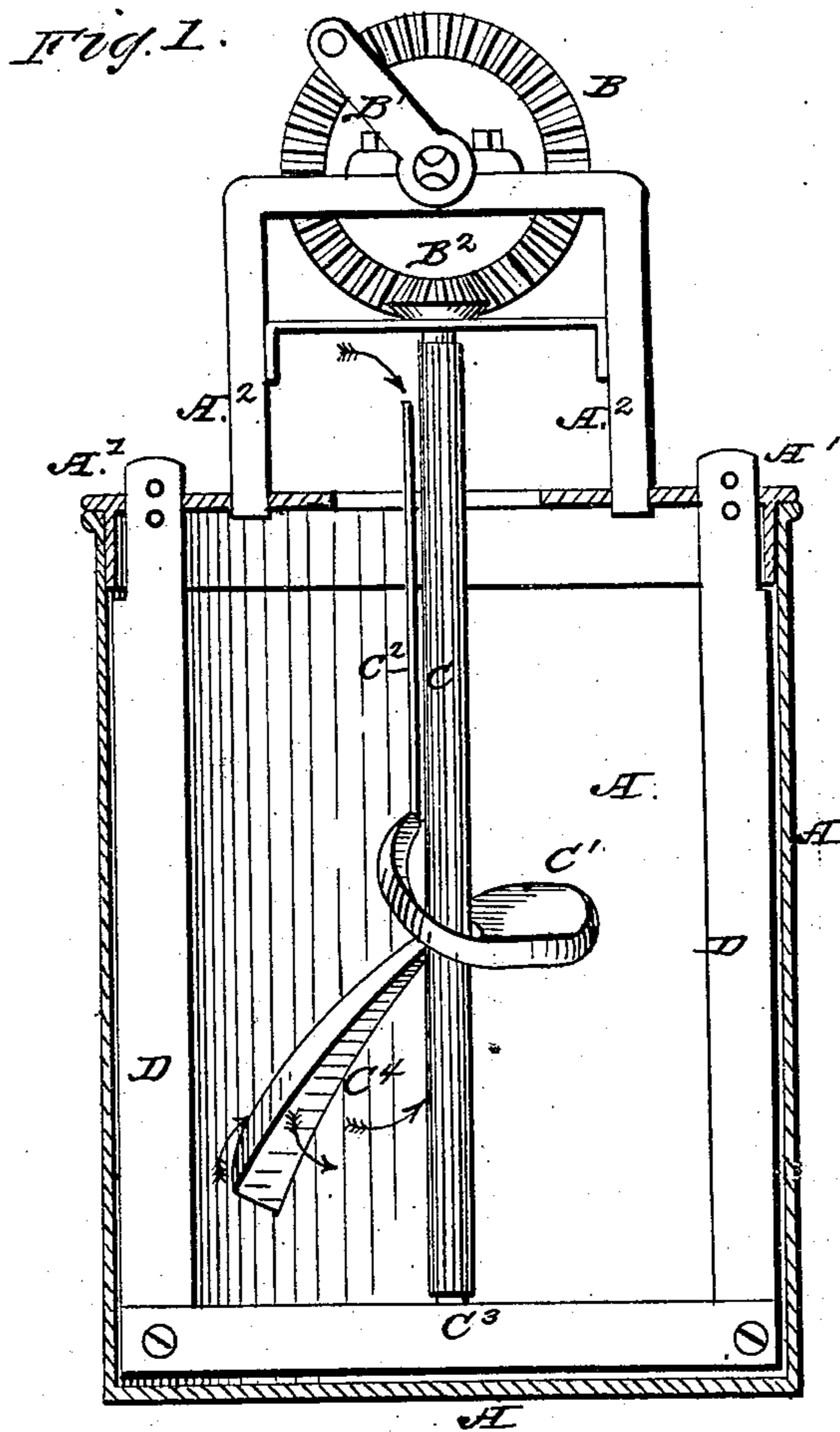


WOOD & SPEER.

Churn.

No. 84,524.

Patented Dec. 1, 1868.



Witnesses

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Letters Patent No. 84,524, dated December 1, 1868.

IMPROVEMENT IN CHURNS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that we, JOHN K. WOOD, of Allegheny City, and DAVID R. SPEER, of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented certain new and useful Improvements in Churns; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to that class of churns to which air is admitted into the body to facilitate the operation of butter-making, and consists in providing a churn-body, of an annular form, with a detachable lid, of any suitable form or shape, to which is affixed a frame-work or standard of suitable construction, on the upper portion of which is a bearing or pillow-block, in which rotates a horizontal shaft, to the extremities of which are attached a bevel-gear wheel and a crank of suitable form. The bevel-gear wheel rotates a smaller bevel-gear wheel, attached, in a suitable way, to a vertical shaft, which rotates in a suitable bearing in a cross-bar of the before-mentioned standard. The vertical shaft is provided with a hollow helical dasher, of an increasing pitch, and tapered in its outline, to the upper portion of which is affixed a hollow pipe, which protrudes through a suitable hole in the before-named detachable lid, and so arranged that there is a clear passage through both pipe and helical dasher, at the base of which is an outlet of probably twenty times the area of the inlet, or thereabouts. This dasher is attached to the vertical shaft in such a manner that it will revolve with the shaft when it is put in motion. The lower extremity of this vertical shaft revolves in a suitable bearing in a cross-bar of a frame, consisting of two uprights, which are attached, in a suitable manner, to the before-named detachable lid, and a cross-bar, which forms the foundation of these uprights, the extremities of which are at or near the base of the body of the churn.

To enable others skilled in the art to make and to use our invention, we will describe its construction and operation.

In the accompanying drawings—

Figure 1 is a vertical section of our improvements in churns.

A represents the body of the churn.

A¹, the detachable lid.

A², the standard.

B, the main bevel-gear wheel.

B¹, the crank.

B², the small bevel-gear wheel.

C, the vertical shaft.

C¹, the hollow helical dasher.

C², the inlet-pipe.

C³, the outlet.

C⁴, the step or bearing.

D, the frame.

The mode of operating with our devices is as follows, viz:

Motion being conveyed to the gear-wheel B by means of the crank B¹, it rotates the gear-wheel B² and vertical shaft C, and helical dasher C¹, and inlet-pipe C², the dasher C¹ being rotated the reverse way to which the pitch of it points. At the same time, and by the same operation, air is admitted into the pipe C², and passes through the helical dasher C¹, and escapes at the outlet C³, and penetrates the buttermilk. The frame D being stationary, breaks the currents caused by the revolution of the helical dasher C¹.

The advantages we claim in our devices are simplicity and speed. As heretofore atmospheric churns have been made, the air is admitted by means of a hollow shaft, to which the dasher is attached, or else in some complicated and thereby expensive mode.

The advantage gained by the introduction of the atmosphere in butter-making is that the cream is in the form of globules, which float in and around the milk, and have to be broken and separated before butter can be made, and it is known that air will break up the same more speedily and better than any mechanical contrivance yet known.

Having thus described the nature, construction, and operation of our devices,

What we claim as new, and desire to secure by Letters Patent, is—

The vertical shaft C, with its operative mechanisms B, B¹, and B², and hollow helical dasher C¹, of the form described, with its inlet-pipe C² and outlet C³, in combination with the frame D, when connected to the lid A¹, as described, when constructed, combined, arranged, and operating substantially as herein described and for the purpose set forth.

In testimony that we claim the foregoing as our own, we affix our signatures, in presence of two witnesses.

JOHN K. WOOD.
DAVID R. SPEER.

Witnesses:

PERCEVAL BECKETT,
JOHN P. CLARK.