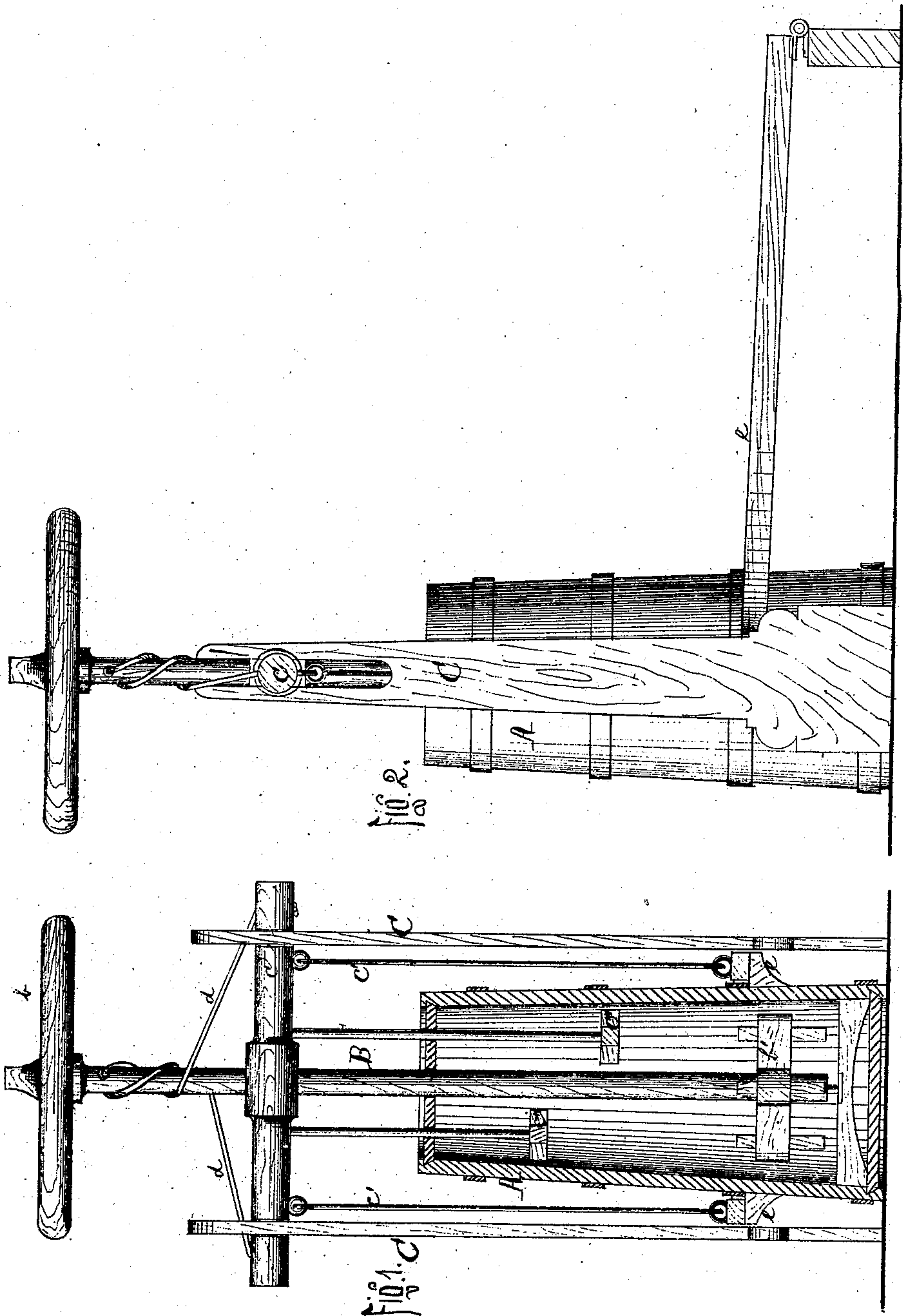


W. L. Gordon,
Reciprocating Churn.
No. 93,818. *Patented Aug 17, 1869.*



WITNESSES:
A. A. Pettit
S. Henson

INVENTOR:
W. L. Gordon
by [Signature] Attorney

United States Patent Office.

W. L. GORDON, OF DALTON, GEORGIA.

Letters Patent No. 93,818, dated August 17, 1869.

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 I, W. L. GORDON, of Dalton, in the county of Whitfield, and State of Georgia, have invented a new and useful 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 accompanying drawings, making a part of this specification, in which—

Figure 1 is a longitudinal vertical section, and Figure 2 is a side elevation.

This invention consists in placing within a churn a vertical shaft, having on its lower end the dasher, and at its upper extremity a horizontal balance-wheel, and there being, between the cover of the churn and the balance-wheel, a cross-head, sliding on said shaft, which cross-head is joined, by means of connecting-rods, with the free end of a treadle, and is also joined, by means of cords proceeding from its extremities, with the head of the shaft, all in such manner that when the cords have once been wound around the shaft, by hand-rotation, and the free end of the treadle raised, then, by exerting the treadle, a continuous rotation of the vertical shaft may be produced.

In the drawings—

A is a churn.

B is a vertical shaft, placed in the churn, extending up through its cover, and having on its upper end a horizontal balance-wheel, *b*.

At the lower end of the shaft, is the dasher *b'*.

Midway on the shaft, and sliding freely thereon, is a cross-head, *c*, joined, by means of connecting-rods *c'*, with the free end of the treadle *e*, the latter being pivoted at its opposite extremity. The free end of the treadle and the cross-head rise and fall together.

The cross-head reciprocates in a pair of slotted standards, C C.

Cords *d d*, passed through diametrical holes near

the ends of the cross-head, are led thence to the head of the shaft B, where they are fastened at opposite points.

Dashers *c'' c''* may be attached to the cross-head, so as to give an up-and-down motion in the same churn where the other dasher gives a rotary motion.

The churn is operated by first rotating the shaft by hand until the cords *d d* are wound around it, spirally, raising the cross-head, and drawing up the free end of the treadle, then by applying the foot to the treadle, and depressing its free end, the cross-head *c*, drawn down, unwinding the cords, and setting the shaft B in motion. The momentum gained by the shaft during one depression of the lever, is sufficient to carry it on until it winds up the cords again in the opposite direction, and is brought to a standstill by the tightening of the cords. This rewinding of the cords again raises the treadle, so that the moment the shaft stops, it can be set in motion again by depressing once more the treadle. So the movement goes on continuously, each depression of the treadle producing motion enough in the shaft to raise the treadle again. The balance-wheel *b* accumulates momentum during the down-strokes, and dispenses it to the shaft during the up-strokes, insuring the rise of the treadle.

Having thus described my invention,

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

The shaft B, provided with the balance-wheel *b*, and combined with the cross-head *c* and treadle *e*, substantially in the manner described.

To the above specification of my improvement I have set my hand, this 3d day of July, 1869.

W. L. GORDON.

Witnesses:

CHAS. A. PETTIT,
A. W. HART.