

No Model.)

S. E. CHUBBUCK.

Machine for Stirring and Discharging Mash.
No. 243,511.

Patented June 28, 1881.

Fig. 1.

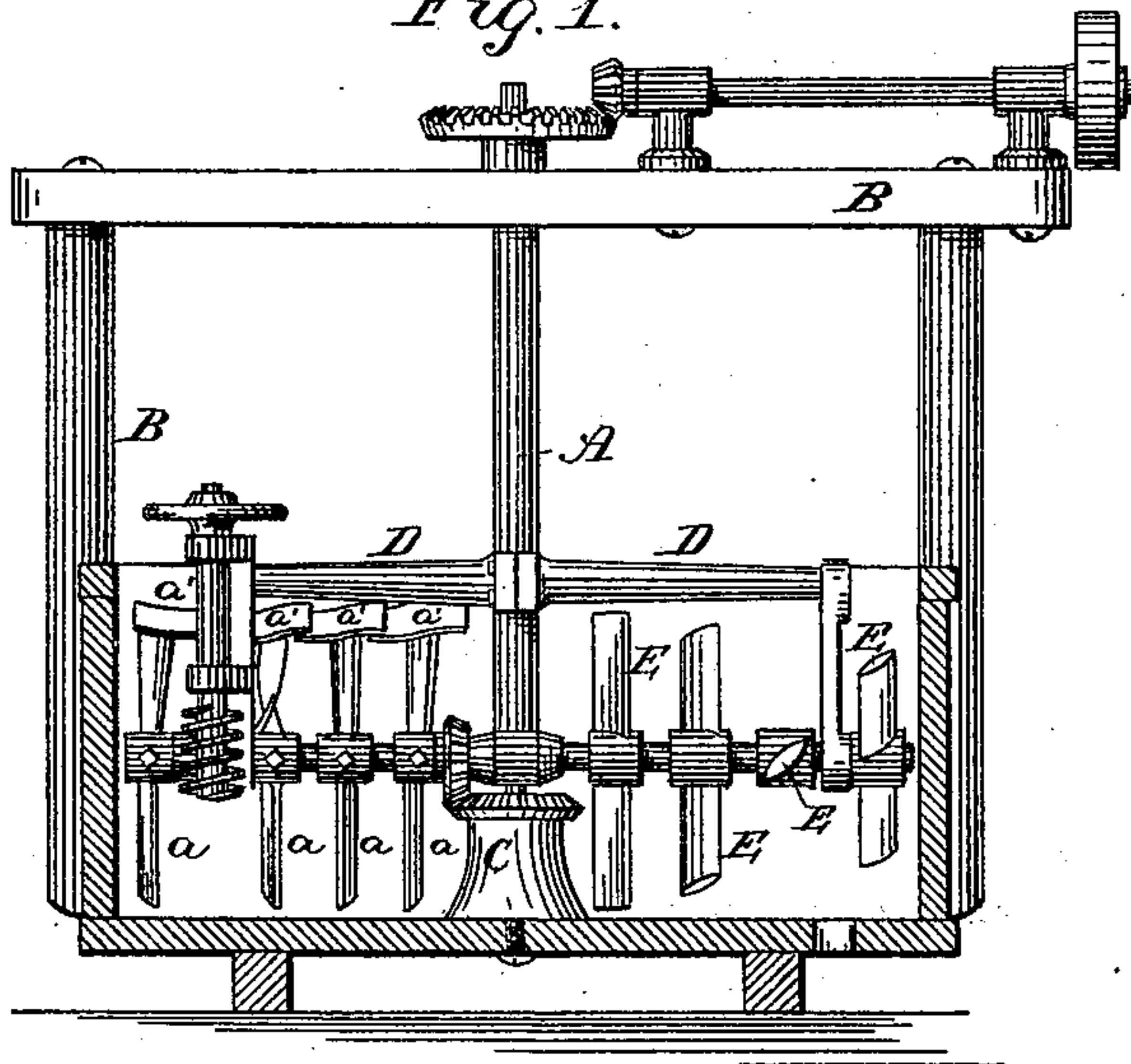


Fig. 2.

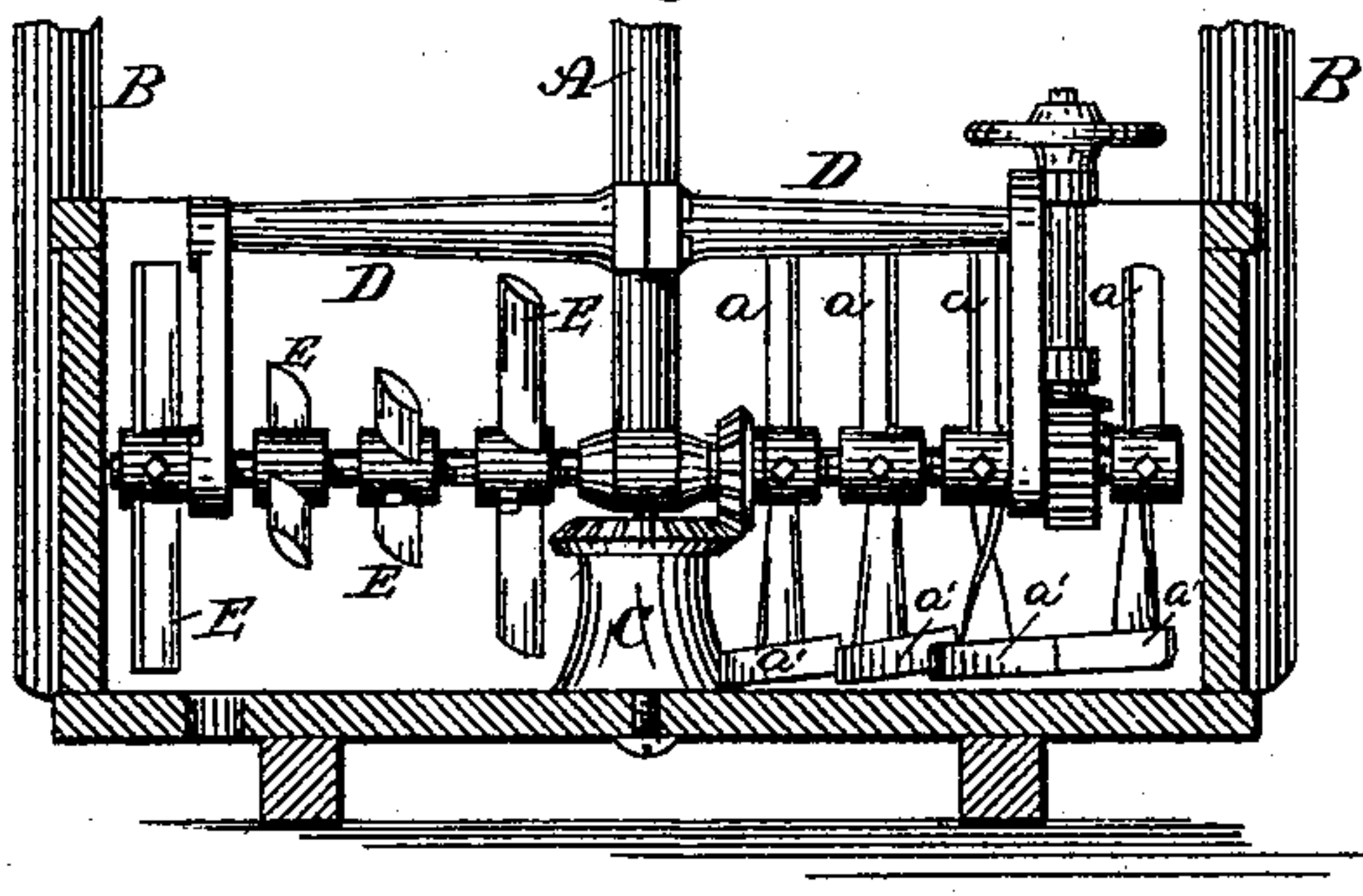
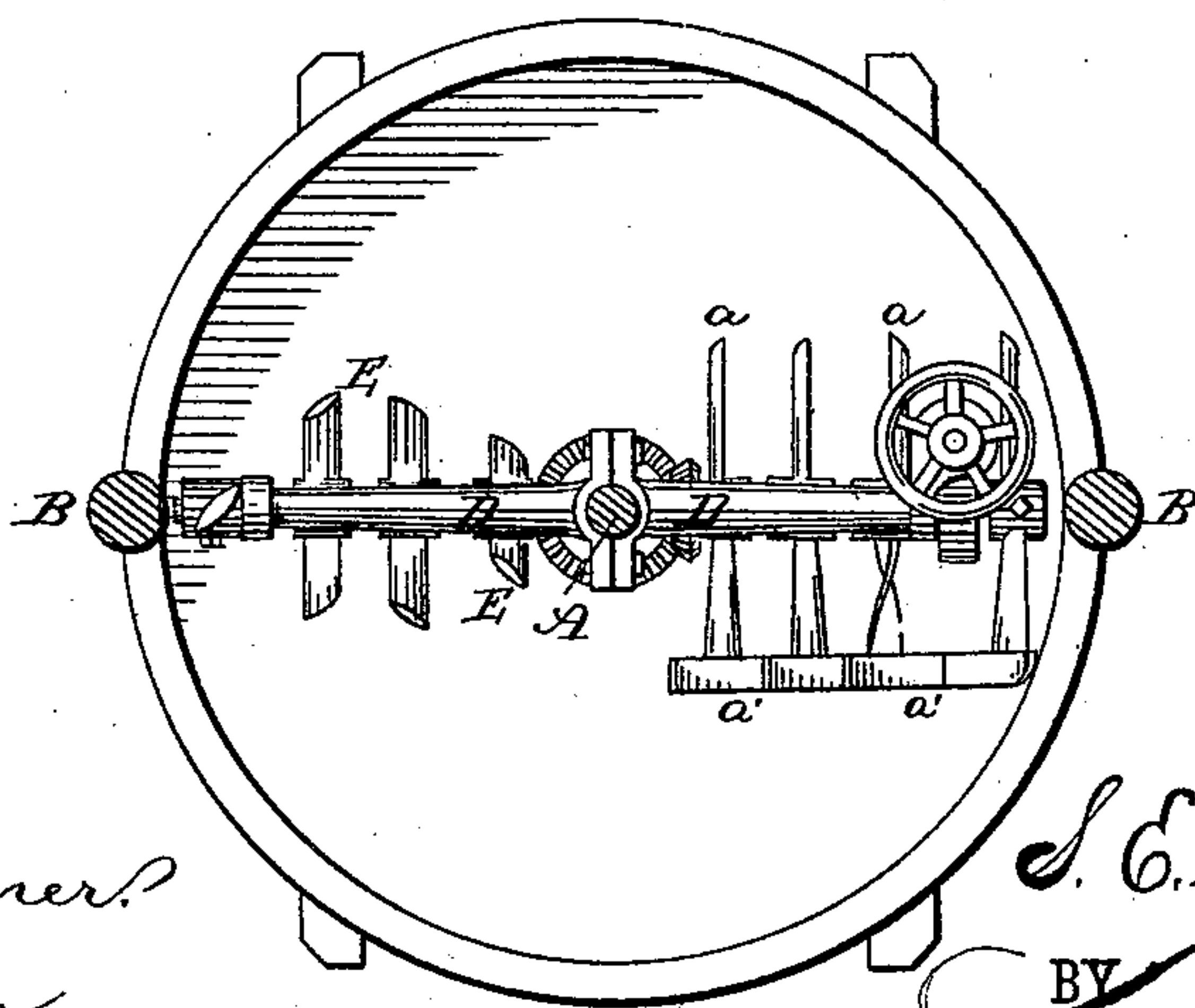


Fig. 3.



WITNESSES:

J. W. Garner.
A. G. Syne.

INVENTOR:

S. E. Chubbuck

BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

STILLMAN E. CHUBBUCK, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO S. E. CHUBBUCK & SONS, OF SAME PLACE.

MACHINE FOR STIRRING AND DISCHARGING MASH.

SPECIFICATION forming part of Letters Patent No. 243,511, dated June 28, 1881.

Application filed April 20, 1881. (No model.)

To all whom it may concern:

Be it known that I, STILLMAN E. CHUBBUCK, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Machines for Stirring and Discharging Brewers' Mash, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of machines for stirring and discharging mash in which vertically and horizontally revolving agitators and scrapers are used; and my improvement consists in certain peculiarities of construction and arrangement, as hereinafter described.

In the accompanying drawings, Figure 1 represents a vertical section with the rakes in position for use; Fig. 2, a partial view of the same from the opposite side, with the scrapers in position for use; and Fig. 3, a plan view with the top portion broken away, and the scrapers and rakes thrown into a horizontal position.

In constructing my improved machine I use the ordinary vertical shaft, A, held in position by frame B and resting in a socket in the support C in the bottom of the tub. The said support is provided with the usual bevel-gear, meshing with a suitable pinion for rotating the horizontal shaft that carries the stirrers. This shaft terminates in the pinion, which is placed on the opposite side of the vertical shaft from the agitators, and in a socket in said pinion a second shaft is loosely secured, in line with the first, for carrying the reversible rakes *a* and scrapers *a'*. The projecting arms D for supporting the outer ends of said horizontal shafts are jointed together rigidly at the center, instead of being constructed in one piece, in order that the several parts of the machine may be removed and replaced without the inconvenience of taking down any part of the frame-work or tub.

The said stirrers or agitators consist of feathering paddles or propellers E, provided with an eye or sleeve at the center of the blade for receiving the horizontal shaft to which they

are secured, and they are arranged upon said shaft in such manner that the corresponding ends of the blades shall lie in two parallel spiral lines. As thus constructed and arranged, it will be seen that at each revolution of the series of propellers the mash will be thrown to and from the center of the tub, or vice versa. Heretofore stationary propellers have been arranged upon both sides of the vertical shaft in such manner that those upon one side would throw the mash to the center and those upon the other to the side of the tub; but according to this arrangement it would require an entire revolution of the horizontal shaft to complete the said operation. By my invention this operation is completed at each vertical revolution of the carrying-shaft, and several times at each horizontal revolution, thus stirring or agitating the mash in a correspondingly greater degree. It is evident, also, from the spiral arrangement of the paddles, that the work begun by the outer blades is taken up and completed by the inner ones in succession, whereby the draft is rendered the lightest that is practicable without leaving any portion of the mash unagitated. On the opposite side of the vertical shaft are the said reversible rakes and scrapers, which are rigidly secured upon a shaft which is made to oscillate by means of a pinion upon the same and a worm gearing therewith. The said worm is secured in a vertical position by means of brackets cast upon the adjacent supporting-arm, and operated by means of a hand-wheel at the top. Each rake is made in one piece with one of the scrapers, and secured centrally to the shaft in the same manner as the propellers, so that either the rakes or the scrapers may be used, as desired, or both may be thrown out of the mash and held in a horizontal position. The advantage of this arrangement is that the scrapers, which are not needed until the tub is to be emptied, are easily thrown out of the way and the rakes substituted in their place. Where the scrapers are rigidly secured, as in the ordinary way, they tend to throw the mash to a certain part of the tub, and thereby offer unnecessary resistance to the draft. The said scrapers *a'* are so arranged that the two outer ones shall touch at their in-

ner edges and ultimately scrape the entire contents of the tub through the opening over which they pass, while the inner scrapers shall throw the mash in the path of the two outer
5 ones, where it will be taken up at the next revolution until the tub is emptied.

As a modification of the paddles, I may have four or more blades to each, so arranged that opposite blades shall throw the mash in opposite or reverse directions. By this means a
10 still greater degree of agitation will be secured.

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

1. In a mash-machine, the combination of a 15 vertically-oscillating and horizontally-revolving shaft having a worm-operated pinion and a series of reversible rakes, *a*, and scrapers *a'*, substantially as shown and described.

2. In a mash-machine, the combination, with 20 a horizontal revolving shaft, of two detachable supporting-arms, *D*, connected at their inner ends, substantially as shown and described, and for the purpose set forth.

STILLMAN E. CHUBBUCK.

Witnesses:

SOLON C. KEMON,
A. G. LYNE.