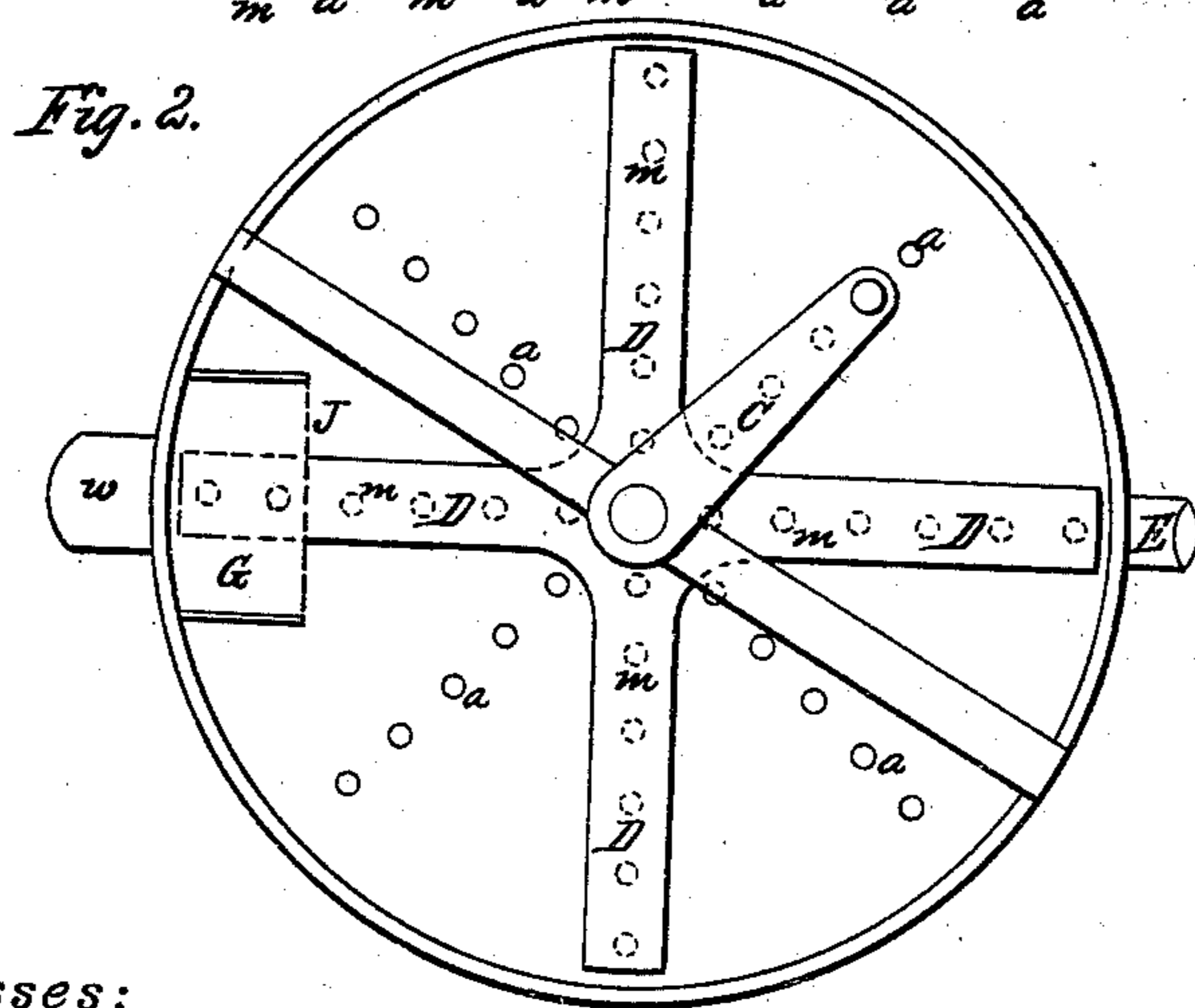
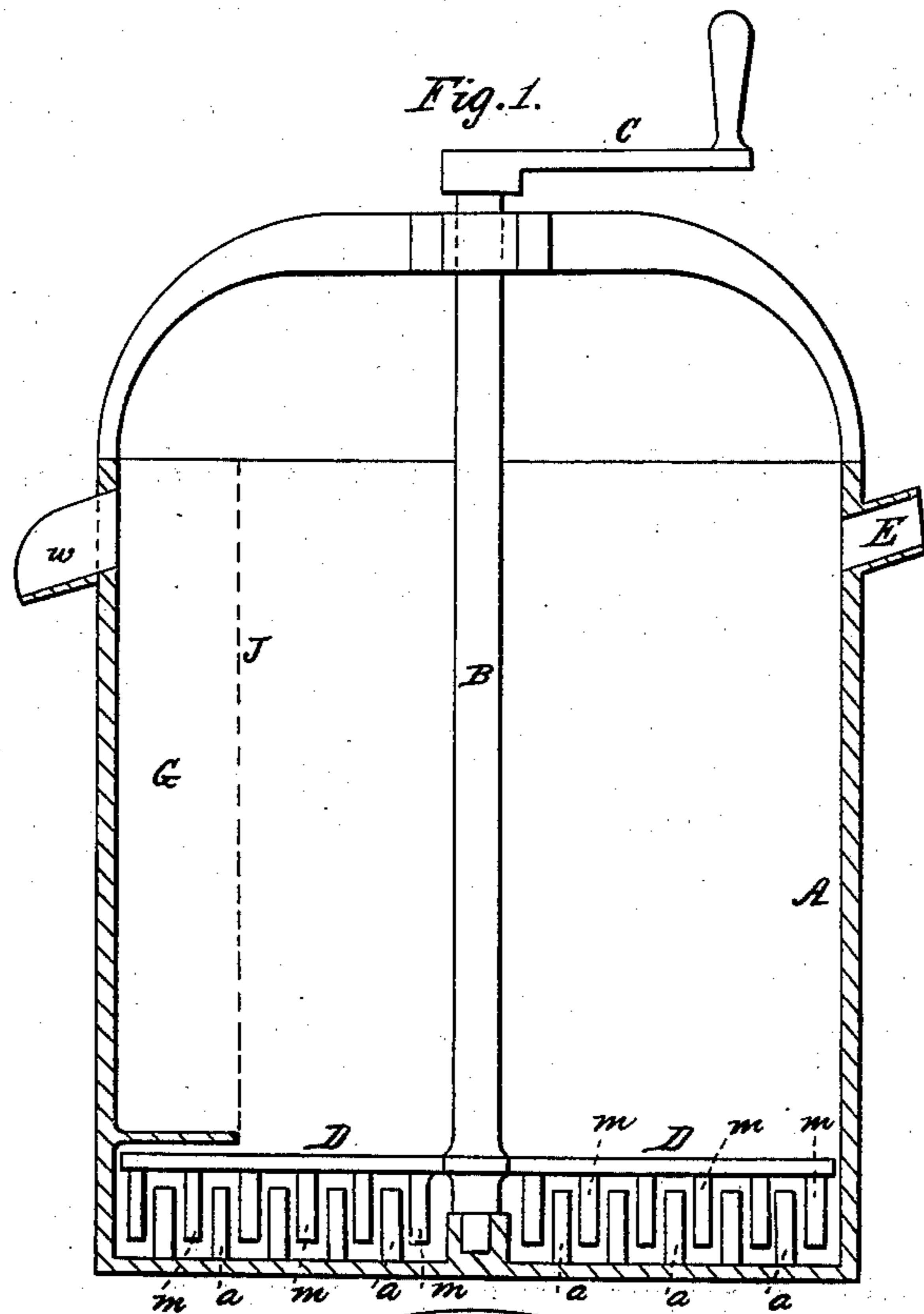


W. MOLLER.
Defecating Sugar.

No. 33,261.

Patented Sept. 10, 1861.



Witnesses:

Henry E. Rader
Wm. H. Farrar.

Inventor:

William Moller

UNITED STATES PATENT OFFICE.

WILLIAM MOLLER, OF NEW YORK, N. Y.

IMPROVEMENT IN APPARATUS FOR DISSOLVING CRUDE SUGAR.

Specification forming part of Letters Patent No. 33,261, dated September 10, 1861.

To all whom it may concern:

Be it known that I, WILLIAM MOLLER, of New York, in the county and State of New York, have invented a new and Improved Machine for Dissolving Raw Sugar; and I hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and the letters of reference marked thereon.

Figure I represents a cross-section, and Fig. II a plan, of my machine.

Raw sugar is generally dissolved in open pans heated by steam introduced into a double bottom of the pan, or into a coil of pipes situated in the pan, or by introducing steam directly into the pan through pipes provided with small holes and situated in the bottom of said pan. By this process the sugar is subjected to a great heat, which facilitates the dissolving of the sugar, but results likewise in the production of a great quantity of sirup, and which said production of sirup increases in proportion to the amount of heat used in dissolving the sugar. To diminish the heat, and consequently reduce the quantity of sirup, vacuum-pans have been employed, in which the sugar is dissolved by a reduced temperature under a vacuum. In my apparatus the sugar is dissolved altogether in cold water without any application of heat, and in consequence of which a considerable saving of sugar on account of the great reduction of sirup is obtained.

My apparatus consists of a circular vessel, A, in the bottom of which pins or projections *a* are fixed. In the center of the vessel A an upright shaft, B, is arranged, turning in suitable bearings, and provided near its upper end with a crank-handle, C, or a pulley, for the purpose of communicating motion to the same. Near the lower end of this shaft B arms D are attached to the same, provided on their under sides with projections *m*, so arranged as to pass between the pins or projections *a* fast on the bottom of the vessel.

E is a pipe to which the cold-water pipe is attached. Opposite to the pipe E a channel, G, is arranged, running from the top of the arms D to the top of the vessel A, and provided with a spout, *w*, a little below the top of said vessel. This channel G is covered on one side with a fine sieve or strainer, J, running the whole depth of said channel, and consequently nearly the whole depth of

the vessel A, for the purpose of allowing the water and dissolved sugar to pass off from any part of the vessel. The sugar to be dissolved is thrown into the vessel A, cold water let in through the pipe E, and the shaft B set in motion. Part of the sugar will easily dissolve in the water and pass through the strainer into the channel G, and then off through the spout *w*, while the more solid part of the sugar falls into the bottom of the vessel A, and is there crushed by the revolving arms D and by the projections *m* while being forced through between the fixed points or projections *a*. The continued motion of the arms D will not only crush the larger parts of the sugar, which will naturally fall to the bottom of the vessel, but will keep the same in a continued agitation in said vessel, causing thereby the sugar to be more readily dissolved. To assist the agitation of the sugar and cold water other arms or projections may be attached to the shaft B, if required.

Another advantage of my apparatus consists therein that the operation is a continued one, as the cold water, as well as the sugar to be dissolved, run in continually, and the dissolved sugar is allowed to run off without interruption, while by all other arrangements where heat is applied to dissolve the sugar the whole quantity of water and sugar has to be brought to a certain temperature by which the sugar will melt, when the pan is emptied to be replenished by a fresh quantity, causing thereby considerable loss of time, labor, and expense, independent of the loss of sugar by the greater production of sirup in the after process, as above mentioned.

I do not claim, broadly, the arrangement of revolving agitating arms or wheels in a vessel or tank, as this has been done before in mashing-machines; but

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

The arrangement of revolving agitating arms or wheels in a vessel provided with a channel running nearly from top to bottom and covered with a sieve or grating, the whole being combined for the purpose of dissolving raw sugar in cold water in the manner substantially as described.

WILLIAM MOLLER.

Witnesses:

HENRY E. ROEDER,
WM. H. FARRAR.