L. A. DE LIME.
Grain-Masher.

No. 203,819. Patented May 21, 1878.

Fig. 1.

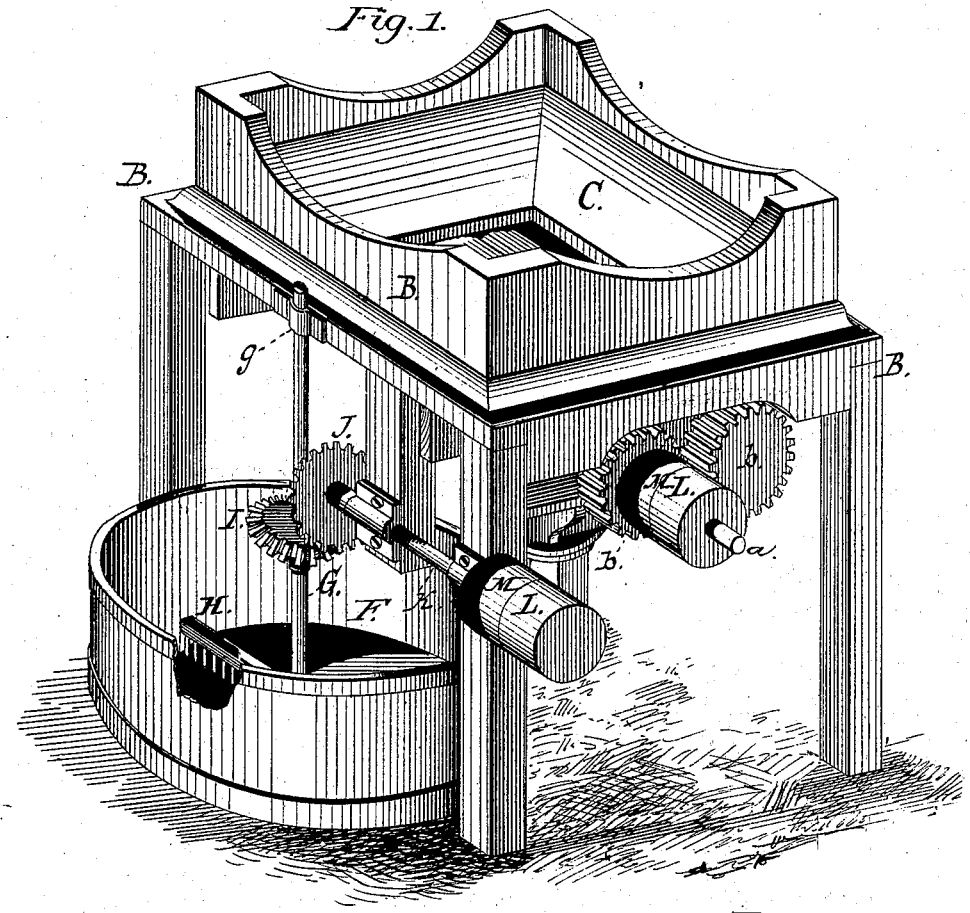
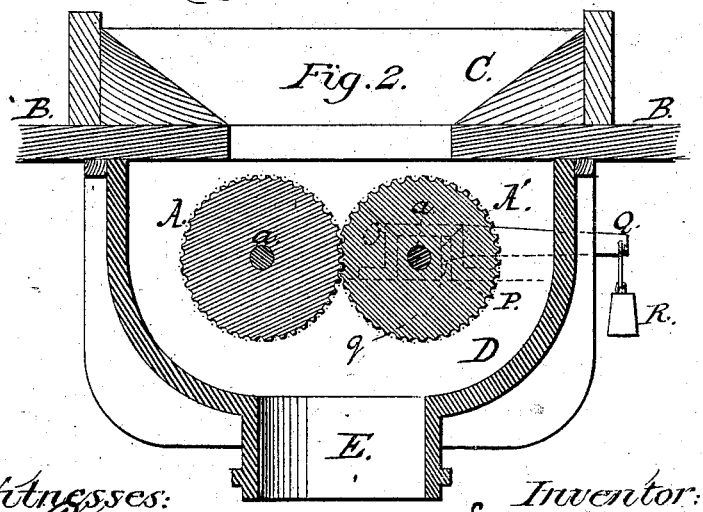


Fig. 2.



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UNITED STATES PATENT OFFICE.

LOUIS A. DE LIME, OF FRANKFORT, KENTUCKY.

IMPROVEMENT IN GRAIN-MASHERS.

Specification forming part of Letters Patent No. **203,819**, dated May 21, 1878; application filed July 24, 1877.

To all whom it may concern:

Be it known that I, LOUIS A. DE LIME, of Frankfort, in the county of Franklin and State of Kentucky, have invented certain new and useful Improvements in Grain-Mashers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to an improved machine for thoroughly mixing and equalizing the mash used in the distillation of alcoholic liquors, so as to insure a perfect fermentation of said mash; and it consists, essentially, in the arrangement of a pair of fluted rollers or cylinders beneath a hopper, and a mash-tub provided with a revolving mixing-rake, and arranged under said fluted rollers or on a lower level, and at one side of said rollers, from which a chute or conducting-tube leads into said tub.

It is well known that in the mash or mashed grain as ordinarily prepared a great many lumps occur, and these lumps retard and prevent a thorough fermentation of the mash, and the result is a very considerable loss of alcoholic product.

To prevent this loss is the object of my invention; and I will now proceed to give a particular description of the means I employ, with reference to the accompanying drawing, in which—

Figure 1 is a perspective view of my machine. Fig. 2 is a vertical section cut transversely through rollers.

A A are two fluted rollers, meshing with each other, and fixed upon shafts *a a*, which are journaled upon a frame, B. Upon these shafts are also fixed gear-wheels *b b*, meshing with each other. The fluted rollers A A′ are arranged under a hopper, C, and within an inclosing-chamber, D, from the bottom of which projects a pipe or mouth, E.

F is a mash-tub situated beneath and at one side of the pipe or mouth E. In the center of the bottom of this tub is a step or bearing for a vertical shaft, G, the upper bearing *g* of which is secured to one side of frame B. Upon this shaft G, and within the tub F, is rigidly mounted a rake, H, the length of which is equal to the diameter of the tub, and the teeth of which project downward to near the bottom of said tub. Upon the shaft G, and above the tub, is fixed a beveled-gear wheel, I, which meshes with a similar wheel, J, fixed upon the end of a shaft, K, at right angles to shaft G, and journaled upon the frame B. Upon the outer end of shaft K are ordinary loose (L) and fixed (M) belt-pulleys, and upon the projecting end of shaft *a* of fluted roller A are similar pulleys—L loose and M fixed. Around these pulleys passes a belt in the usual manner. To the shaft *a* is also attached a shaft or winch; or the machine may be connected in any of the ordinary modes with a steam-engine.

The fluted roller A′ is mounted in sliding bearings O, and in frames P surrounding said bearing are pivoted levers Q, having shoulders *q*, resting against the outer sides of the sliding bearings, and long arms, which extend outward, and are provided with sliding weights R.

The operation of my invention is as follows: Suppose the machine to be running either by steam or hand power. A portion of mash as ordinarily prepared, and comprising a great many lumps, is thrown into the hopper C, and is caught and crushed to a uniform mass by the fluted rollers, between which it passes, and thence through pipe E to a suitable chute or pipe, which conducts it to the tub F, in which the rake H is revolving, owing to its connection by belt and pulleys with shafts *a*, as already explained. This rake thoroughly mixes and loosens up the crushed mash, which may then be removed to fermenting-tubs. By moving the weights R outward on the levers Q the fluted roller A′ is caused to press against roller A with increased force, and vice versa, and thus the degree of uniformity to which the mash may be crushed may be regulated.

I am aware that fluted rollers have been heretofore employed in machines for making brick for first crushing the clay, which is afterward mixed in water by a revolving wheel or rake; and I do not therefore wish to claim, broadly, the use or employment of such rollers or revolving rakes, except in combination with other mechanism already described, and for the purpose specified.

Having now fully described my invention and explained the operation thereof, I claim and desire to secure by Letters Patent—

In a grain masher, the combination of the crusher formed of the fluted rollers A A, the one having a fixed and the other a movable axis, conducting-chute E, and rotary mixing-rake H, the several parts being arranged and combined to operate in connection with suitable gearing, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

LOUIS A. DE LIME.

Witnesses:

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