

No. 762,915.

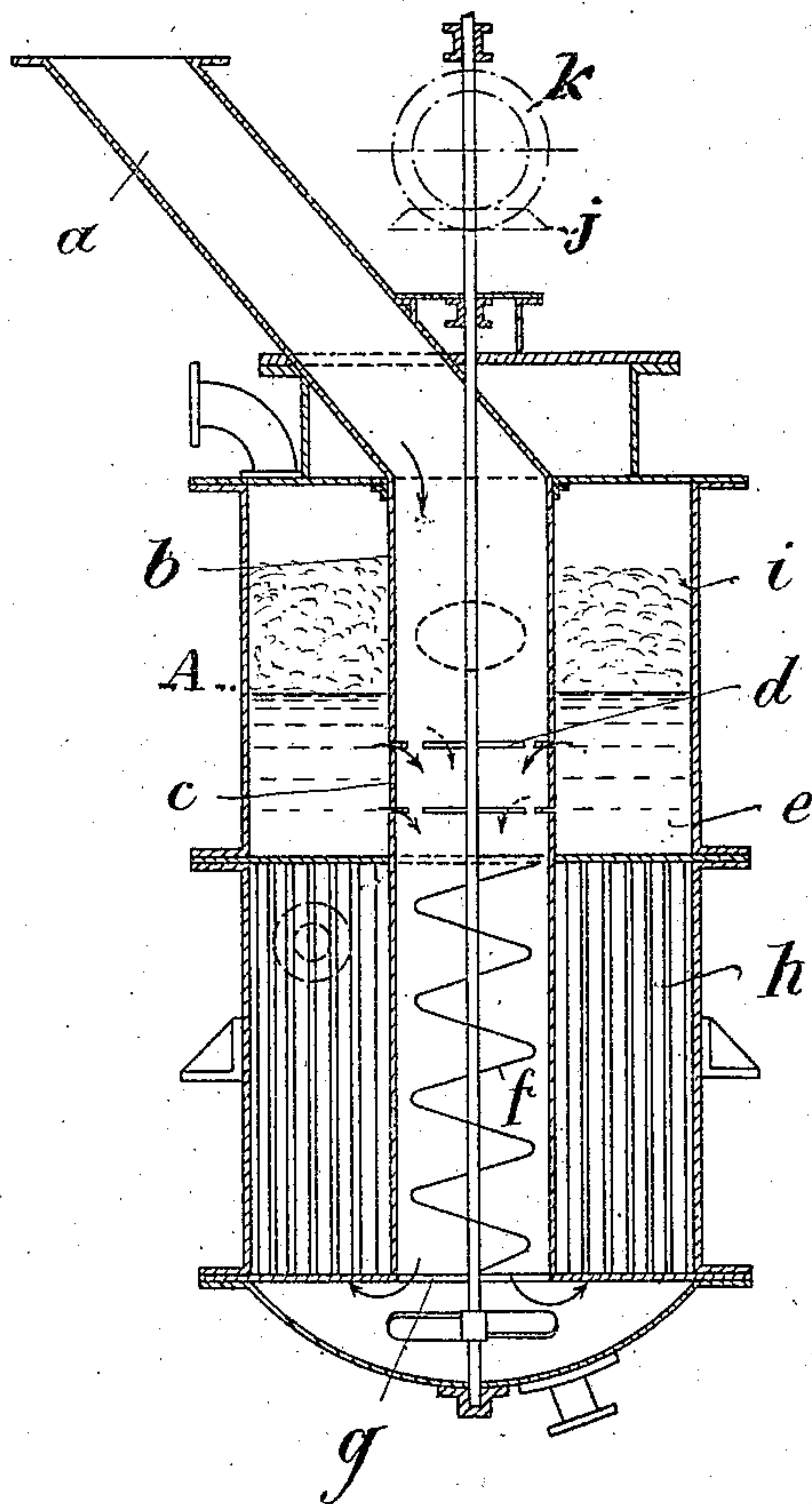
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E. KUTHE.

APPARATUS FOR MAKING LIME SUCRATE.

APPLICATION FILED JULY 6, 1903.

NO MODEL.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR MAKING LIME SUCRATE.

SPECIFICATION forming part of Letters Patent No. 762,915, dated June 21, 1904.

Application filed July 6, 1903. Serial No. 164,429. (No model.)

*To all whom it may concern:*

Be it known that I, EUGEN KUTHE, a subject of the Emperor of Germany, and a resident of Fröbeln, Silesia, Germany, have invented certain new and useful Improvements in Apparatus for Making Lime Sucrate, of which the following is a specification.

This invention relates more particularly to devices adapted to mix finely-communited or dust-like materials with a liquid; and its object is especially to prevent the formation of foam.

It consists in the combination, with a suitable liquid-chamber, of a dust-feeding pipe, means for admitting the liquid into said pipe in thin jets, means for agitating the mixture in said pipe, and in various details of construction that will be described hereinafter.

The drawing accompanying this specification shows a sectional view of a device embodying this invention.

The liquid chamber or vessel A is provided with a centrally-disposed dust-feeding pipe *a*. Narrow orifices *d* are provided in the pipe *a* at *c*, and the bottom of the pipe *a* is open at *g* to communicate with the outer part of the chamber A. The orifices *d* may be made in the form of slots, as shown in the drawing; or round openings (not shown) can also be used to advantage. A spiral conveyer *f* is journaled to revolve in the pipe *a* to force the material therethrough. This conveyer may be driven in any suitable manner, as by bevel-gears *j* *k*. (Indicated at the top of the figure in dotted lines.)

This invention is particularly adapted for bringing about a chemical action between a liquid and dust-like material, and in order to cause a uniform action it is necessary that the particles of material are brought into contact with the particles of liquid in as uniform and even manner as possible.

The mixing apparatus set forth in this invention is used more particularly for mixing sugar waters or juices with chalk-dust.

A series of cooling-pipes (represented by *h*) are provided in the bottom of the chamber to be used in the event that it is desired to cool the mixture.

The operation of this device is as follows:

The chamber is filled with liquid to a level somewhat above the orifices *d*, and the material is introduced through the pipe *a*. As the material passes down through the pipe *a* it comes in contact with the thin streams of the liquid which flow in through the orifices and becomes mixed therewith. The spiral conveyer then forces the mixture down through the pipe *a* and out at the open end *g* into the chamber A. Any foam produced by the mixing process or by the action of the conveyer rises and accumulates in the top of the chamber, as at *i*, and it will be noted that the level of the liquid should be kept above the orifices to prevent the foam from passing into the pipe *a*.

Having thus described my invention, which is intended to cover various modifications which will readily suggest themselves as coming within the scope thereof, what I claim, and desire to secure by Letters Patent, is—

1. In an apparatus for mixing dust-like material with liquids, the combination of a vertical dust-feed pipe, having openings in its upper portion, a conveyer mounted in the lower portion of said pipe, a vessel adapted to contain liquid surrounding said pipe and communicating with the lower end thereof, whereby liquid in said vessel may flow in through said slots to mix with material introduced into the pipe and the mixture thus formed be discharged at the lower end of said pipe into said vessel.

2. In a mixing apparatus, the combination of a chamber for a liquid, a feed-pipe for material centrally disposed in said chamber and open at the bottom and provided with orifices therein, and a conveyer in said pipe.

3. In combination, a vessel for a liquid, a feed-pipe in said vessel, projecting near the bottom thereof and open at its lower end and having narrow openings below the liquid-level, a conveyer in said pipe and refrigerating-pipes in the lower portion of said vessel.

In testimony whereof I have affixed my signature in presence of two witnesses.

EUGEN KUTHE.

Witnesses:

WILHELM SCHATZ,  
BRUNER CLAASSEN.