

UNITED STATES PATENT OFFICE.

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METHOD OF CLEANSING MILK RECEPTACLES.

No Drawing. Original application filed April 11, 1922, Serial No. 551,570. Divided and this application filed October 19, 1923. Serial No. 669,560.

My invention relates to a new and improved method of cleansing milk receptacles and particularly the metal milk cans which are in common use by farmers to transport their milk to dairies, and the like. However, my invention applies to receptacles intended for the transportation not only of milk, but of milk products, such as ice-cream, etc.

It has heretofore been considered necessary to cleanse such receptacles with a solution containing soap or similar substances so that the solution was of an alkaline character. In fact, in many localities, the rules of the local authorities have compelled the use of alkaline washing solutions.

I have discovered that the use of cleansing mixtures of a strong alkaline character is unnecessary and indeed objectionable. If a can has been emptied in a dairy, it usually contains a certain amount of milk residue on the walls thereof. When the can is washed with an alkaline fluid, I believe that this residue reacts with the alkaline fluid so as to produce a substance which can be rinsed out of the can only with great difficulty.

As a result of this, many cans are not sufficiently washed or rinsed at the dairy and the imperfectly washed cans are given a decided odor because of this. Although it is against the rules of nearly all localities to have the farmer wash the cans, after they have been returned by the dairy, due to the fact that the washing methods of a farmer can not be properly supervised and are often unsanitary, the farmer very often washes his cans at his farm in defiance of local regulations so as to remove this objectionable odor, so that the cans are often in an unsanitary condition when they are refilled for the dairy.

In addition the use of an alkaline washing fluid discolors and darkens the cans which makes their appearance decidedly objectionable.

According to my invention, a mixture of water which is free from any alkaline reaction, together with pure sand is employed. This mixture is preferably employed by forcing the water mixed with the sand in the form of a powerful solid sheet or sheets. The sheet or sheets are caused to impinge upon the wall of the can while they are in

the solid condition, that is, before they have broken up into a shower or spray.

I have found by practical experience that in washing an ordinary milk can, which is about 12 inches in diameter, it is sufficient to use a stream of water under a pressure of ten pounds per square inch, said stream of water having a total cross section of about 1½ inches. I prefer to use a plurality of such jets as shown in my previously filed application, Serial Number 551,570 filed on the 11th day of April, 1922, of which this is a division.

By causing the water to impinge upon the wall of the can while it is in a solid form, the sheets of water impart a very powerful blow to the wall of the can and they spread out in all directions at the point where they strike the can so that the dirt or milk residues are subjected to a very powerful cleansing action. I prefer to make each jet of water (mixed with sand) of an annular form so that said jet strikes a complete annular portion of the can. By moving the jet and the can with respect to each other, the entire surface of the can can be thus acted upon. Of course, I do not limit this application to the use of a jet of water which forms a complete annulus. The use of a jet or jets as before mentioned obviates the need for the use of cleansing brushes or the like, which present solid surfaces to which the milk residues can cling. This is an important advantage of my invention because if a brush or the like is used upon a series of cans, it has been shown by experience that a proper rinsing of the brush or the like is impracticable, so that the bacteria from the more dirty cans are carried over to the less dirty cans.

With the use of the best cleansing devices, employing brushes and alkaline fluids, it has been considered that first-class results have been secured if a washed can shows a count of 10000 bacteria. Practical experience has shown that in cleansing cans according to my method a count of 1500 can be maintained as an average performance and that counts as low as 400 have been secured, and even sterile cans at times.

I have described the preferred embodiment of my invention, but I do not wish to be limited to the specific abrasive before

mentioned and it is obvious that other changes could be made without departing from the spirit of my invention.

I claim:

A method for removing milk residues from the walls of metal receptacles for milk products which consists in forcing upon the inner wall of said receptacle a mixture of

water and abrasive, said mixture being substantially non-alkaline and being projected upon said wall with sufficient force to remove the deposits therefrom. 10

In testimony whereof I hereunto affix my signature.

IRA H. KENDALL.