Jan. 20, 1931. R. W. McCARTY ET AL 1,789,657

PROCESS FOR CLEANING OLLAS

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Fig. 1.

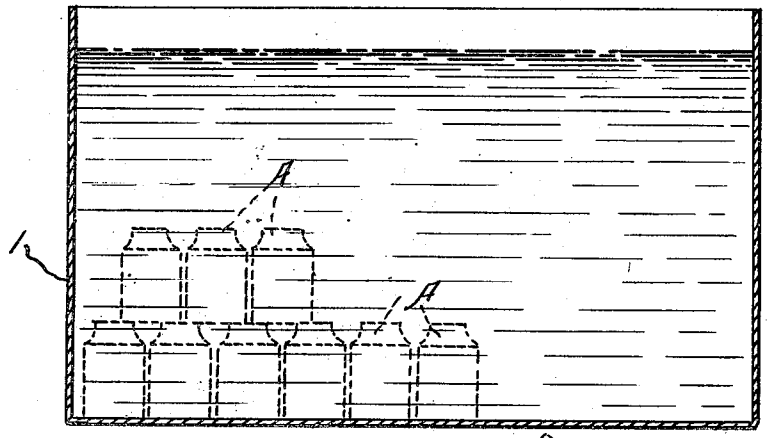


Fig. 2.

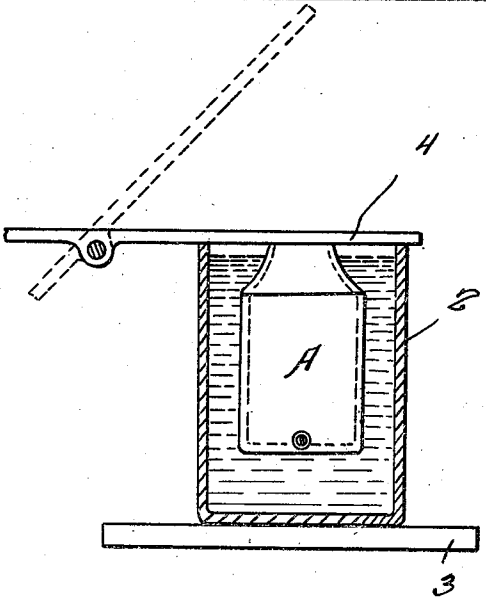
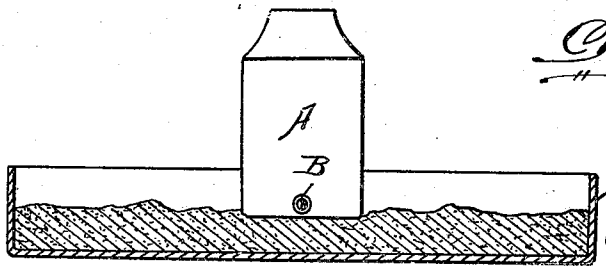


Fig. 3.



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Fig. 4.

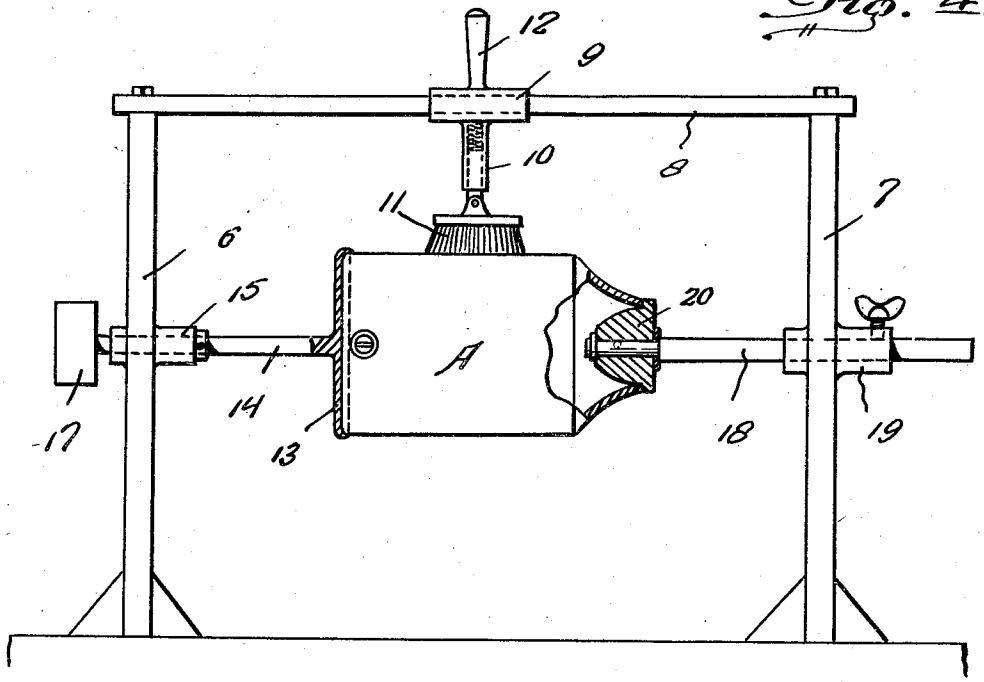
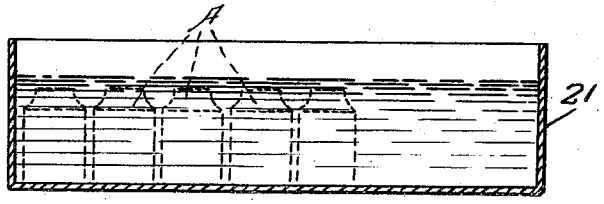


Fig. 5.



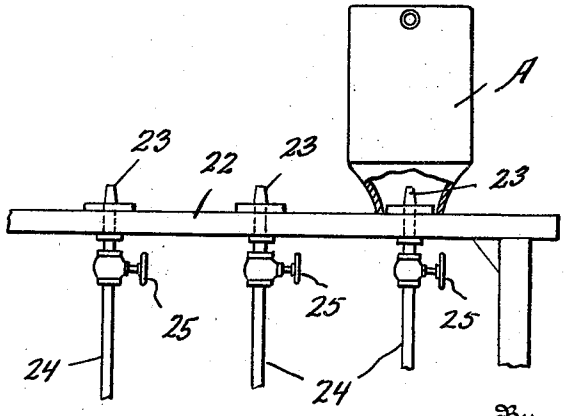


Fig. 6.

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UNITED STATES PATENT OFFICE

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PROCESS FOR CLEANING OLLAS

Application filed March 8, 1929. Serial No. 345,341.

The present invention relates to improvements in proceses for cleaning clay products and has reference more particularly to a process or method for cleaning ollas that are used in evaporative water coolers.

Ollas are constructed of clay and are burned in a kiln to a certain degree of heat depending upon the grade of the olla needed. The heat treatment tends to shrink the olla and thus determines the sweating capacity of the olla. An olla must sweat in order to effect the proper cooling of the water and if the olla is caused to sweat too much, all of the water would be lost by evaporation. Again if the olla does not sweat at all, the water becomes stale.

The clay from which these ollas are formed contains certain amounts of foreign substances such as sulphur, calcium, alkalis and salts of different formations, and while an olla sweats, these foreign substances seep through the pores and collect on the outer surface of the olla. This matter that collects usually is in the form of an alkali having a white appearance.

The appearance of this objectional matter on the outside of an olla tends to condemn the water cooler with which the olla is associated as it leads persons to believe that the water contained in the cooler also has a certain amount of this objectionable alkali present therein.

It is therefore one of the principal objects of the present invention to provide a process or method whereby a chemical reaction takes place to remove the foreign substance from the outer surface of the clay ollas in a positive and efficient manner, and this without injuring the olla or resulting in having an effect upon the water that is contained in the olla when the same is used as a part of an evaporative water cooler.

One of the important objects of the present invention is to provide a process of cleaning ollas which consists in subjecting an unclean olla in a tank containing a chemical mixture wherein the ingredients possess the detergent properties of chlorine.

A still further object is to provide a process for cleaning ollas which consists in sanding the outer surface of the chemically treated ollas, then subsequently polishing the outer surface to remove the acid as well as to evenly polish the olla, the polished olla then being submerged in a tank of clear water, after which steam or a dry heating medium is injected into the interior of the olla for sterilizing and sweetening the clay olla.

Another important object of the invention is to provide a process for cleaning ollas that can be expeditiously carried out.

In the drawings forming a part of the present invention and wherein like reference characters designate corresponding parts throughout the same;

Figure 1 is a sectional view through the tank containing the chemical mixture that is utilized in carrying out the first step of our improved process.

Figure 2 is a sectional view through a crock showing the olla submerged in the acid solution in the crock that is used in carrying out the second step of our process.

Figure 3 is a sectional view through a receptacle containing a quantity of sand that is used to remove the acid from the outer surface of the olla after the same has been removed from the chemical crock.

Figure 4 is a diagrammatic view of a polishing apparatus that is employed to polish the olla after the completion of the sanding operation.

Figure 5 is a sectional view through a water tank in which the polished olla is submerged; and

Figure 6 is a view showing the manner in which the interior of the olla is subjected to the action of steam or dry heated air after the olla has been removed from the water tank shown in Figure 5.

In carrying out our improved process, the olla that has become coated with the objectionable alkali on its outer surface is removed from the evaporative water cooler and is placed within the tank 1 shown in Figure 1 and in which tank is contained water mixed with chlorine in any form, such as a small quantity (from one-half to one pound) of chloride of lime. This tank is of such size as

to accommodate approximately three-hundred and sixty ollas and the ollas are submerged in the chemical solution in the tank 1 for approximately twelve hours.

After soaking in the chemical solution in the tank 1, the olla is removed therefrom and is placed within a suitable crock 2 that rests on a bench or the like shown at 3 in Figure 2. However before the olla is placed in the crock 2, the hole formed in the side of the olla A adjacent the bottom thereof for receiving the usual faucet is closed by a suitable stopper or bung B. This crock 2 is adapted to contain a chemical solution consisting of approximately 75% of hydrochloric or muriatic acid and 25% water.

Due to the buoyancy of the olla, the same has a tendency to rise upwardly in the crock 2 and for the purpose of maintaining the olla submerged in the chemical solution in the crock, we provide suitable means, such as the pivoted plate-like member 4 that extends across the top of the crock and also across the open top of the neck of the olla in the manner as clearly suggested in Figure 2.

The olla is submerged in the acid solution in the crock 2 for one minute after which the acid treated olla is removed from the crock and is placed in the sand box 5 shown in Figure 3 and sand is rubbed over the outer surface of the olla to remove or scrub the acid off as the acid has a tendency to injure the olla if left on the olla for a long period.

The next step in carrying out my improved process resides in positioning the olla in a polishing apparatus such as is shown diagrammatically in Figure 4 and which apparatus includes a pair of vertically spaced standards 6 and 7 respectively across the upper ends of which is disposed a cross rod or bar 8 on which is slidably arranged the sleeve 9 and carried by this sleeve is the radially disposed arm 10 that has associated with its outer end, a brush unit denoted generally by the numeral 11. A handle 12 extends radially from the opposite side of the sleeve 9 for manually actuating the brush 11 over the outer surface of the olla undergoing the polishing treatment.

The olla is held in the polishing machine in a horizontal position and to this end, the closed end of the olla is arranged within a clamping head 13 carried by the inner end of a rotatably driven shaft 14 that is journaled through a suitable bearing 15 carried by the vertical standard 6 and a drive pulley 17 is secured on the outer end of this shaft 14 for connection with a suitable driving mechanism for rotating the shaft 14.

An axially movable shaft 18 is arranged within a suitable bearing 19 carried by the other upright 7 and a suitable rotatable closure 20 is carried by the inner end of the axially movable shaft 18 for disposition within the open end of the olla.

When the olla is properly supported in the polishing apparatus, and the brush 11 is moved across the outer surface of the cylindrical olla, during the rotation of the olla, the outer surface of the olla will be polished evenly and during the polishing operation, sand may be sprinkled on the olla to effect the removal of the acid from the outer surface.

The next step in the process consists in submerging the polished olla in a tank of water 21 shown in Figure 5 for the purpose of washing off the sand that remains on the outer surface of the olla after the polishing operation.

The process further contemplates the provision of means for sterilizing and sweetening the olla and to this end, we provide the bench or table 22 to which extends upwardly the air or steam jets or nozzles 23 having supply pipes 24 associated therewith and a valve 25 of any conventional construction is arranged in each supply line.

The olla after being removed from the tank 21 is positioned in an inverted manner on the top of the table 22 over one of the jets or nozzles 23 so that steam or a dry heating medium will be sprayed against the inner surfaces of the olla.

After being subjected to this steam or dry heat treatment, the olla is placed in a large tank of pure water where it remains submerged for several hours and upon being removed from this tank of water, the olla is thoroughly cleaned and may again be used in evaporative water coolers in the same manner that a new olla is used.

The chemical reaction that takes place during the second step of the above process may be more clearly expressed by the following formula:

$$CaOCl_2 + 2HCl = 2Cl + CaCl_2 + H_2O.$$

It will thus be seen from the foregoing description, that we have provided an improved process for cleaning ollas and while we have shown and described the present invention as being used in the treatment of ollas, it is to be understood that the same process may be carried out in cleaning other clay products in an expeditious and cheap manner.

What we claim is:

1. A process for treating ollas or other clay products which consists in subjecting the ollas to a chemical solution that contains detergent properties whereby the foreign matter on the outer surface of the olla will be removed, then removing the chemical solution from the outer surface of the olla, then brushing the outer surface of the cleaned olla, and subsequently submerging the brushed olla in clear water.

2. A process for cleaning ollas or other clay products which consists in subjecting the

outer surface of the olla to an acid containing solution, then sanding and brushing the outer surface of the acid treated olla to remove the acid solution from the outer surface thereof.

3. A process for cleaning ollas or other clay products which consists in subjecting the outer surface of the olla to an acid containing solution, then sanding the outer surface of the acid treated olla to remove the acid solution from the outer surface thereof, then brushing the olla and subsequently submerging the brushed olla in clear water.

In testimony whereof we affix our signatures.

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