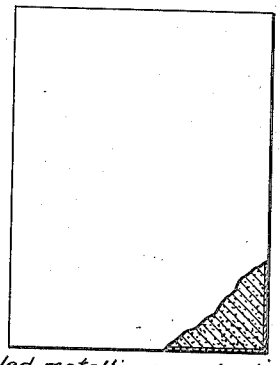
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PRODUCTION OF DILUTE ACIDS

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Sealed metallic receptacle capable of being punctured and containing an acid forming substance.

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PRODUCTION OF DILUTE ACIDS

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1 Claim. (Cl. 23—139)

This invention relates to metallic containers being filled with acid forming substances, which containers are punctured and brought into water whereby solutions containing a free acid are formed.

Dilute acids are used for many purposes, thus for instance, in metal pickling processes, for the preservation of green-fodder, as accumulator acid, etc. The working with concentrated liquid acids is, however, very dangerous inasmuch as unskilled workmen not being used to handle acids, can easily burn or poison themselves, especially since the dilution of acids with water calls for especial precaution. Therefore it has been aimed at providing acids in such a form that they can be handled without any danger.

In accordance with the present invention dilute acids are prepared without danger when substances yielding upon reaction with water acids, as for instance, sulfuric acid, hydrochloric acid, acetic acid, such as for instance, sulfur trioxide, fuming sulfuric acid, pyrosulfuric acid, chlorosulfonic acid, thionylchloride and sulfuryl chloride, acetyl chloride, titanium tetrachloride, silicon tetrachloride, stannic tetrachloride, are filled into metallic containers, and the containers are brought into water after having been punctured.

As packing material not only sheet copper and leaded sheet iron have proved suitable but also ordinary sheet iron, for instance, tin plate and black plate may find application, provided, the cover of the container is tightly closed, for instance, by welding or folding. Such closure is tight against moisture and air and can be made especially tight when working into the folding during this process for instance lead, caoutchouc, asphalt, etc. The means for tightening can also be obtained by squirting the tightening material upon the rim of the cover or bottom or also by applying massive packing rings. The content of the container is dissolved by placing it into water after it has been punctured at different places shortly before use. Preferably the container is weighted so that it remains on the bottom of the reservoir.

In this manner acid solutions of any desired concentration can easily be obtained. Also solutions containing several acids are obtainable in the same manner when using, for instance, chlorosulfonic acid and sulfuryl chloride. The solutions obtained can be employed for all industrial and also other purposes, for instance, in the preparation of green-fodder.

The accompanying drawing illustrates in front elevation, with a portion broken away to expose the interior, an embodiment of the invention.

The receptacle illustrated by the drawing is constructed of two metal sheets which are welded or folded together at the ends by suitable means. One part of metal sheet forming the front side of the receptacle is broken away to show that the receptacle is filled with an acid producing compound which is indicated by points in the drawing. The receptacle illustrated by the drawing shows a flat shape, however, it may have every shape suitable for the purpose in question.

The invention is further illustrated by the following examples without being restricted thereto:—

Example 1.—A black plate container filled with 5 kgs. of sulfur trioxide and tightly closed by electric welding is punctured at some places. A weight of about 3 kgs. is attached thereto and the container is brought into 94 liters of water. The water reacts with the sulfur trioxide inside the container with a buzzing noise. From the perforations a dilute sulfuric acid escapes which mixes with the water yielding thereby a 6% aqueous sulfuric acid solution, suitable for metal pickling processes.

Example 2.—A tightly folded tin plate container containing 13.5 kgs. of sulfuryl chloride is punctured at several places and, after weighting, is brought into 100 liters of water. The reaction and dissolution of the content proceed in the same manner as indicated in Example 1, and an aqueous solution containing 9.6 grams of sulfuric acid per liter and 7.3 grams of hydrochloric acid per liter is obtained, which can directly be used for the preservation of green-fodder.

Example 3.—4.6 kgs. of chlorosulfonic acid are packed in a tin can. The weighted container is punctured at several places and thrown into 100 liters of water. A solution containing 14.6 grams of hydrochloric acid and 39.2 grams of sulfuric acid in one liter is thus obtained.

We claim:—

Process of preparing aqueous solutions containing sulfuric acid, consisting in puncturing a tightly closed metallic container containing a substance which contains free sulfur trioxide selected from the group consisting of sulfur trioxide, fuming sulfuric acid, pyrosulfuric acid and chlorosulfonic acid and bringing the punctured container into water.

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